PERIODICAL ROOM
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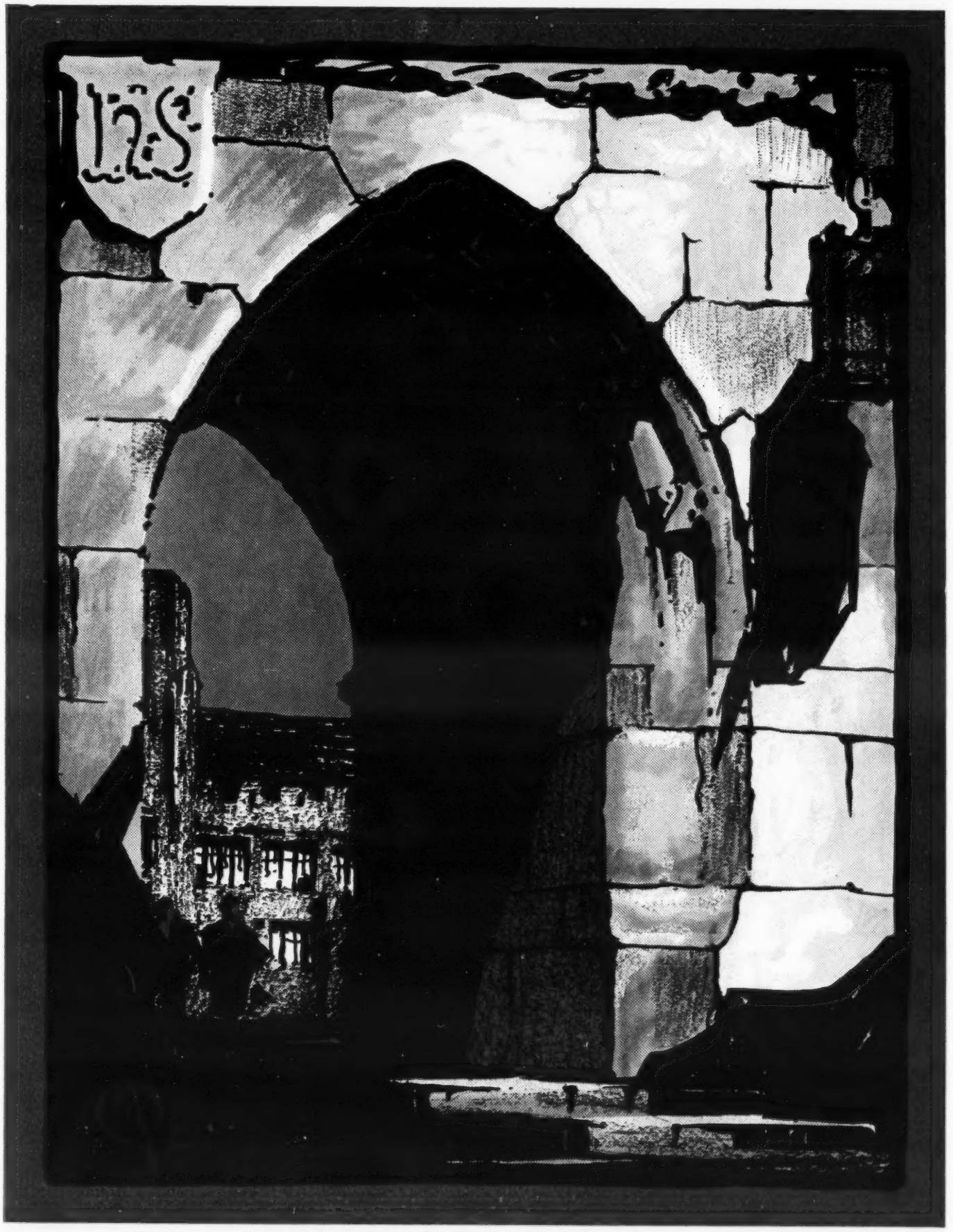
MAY 2 1929

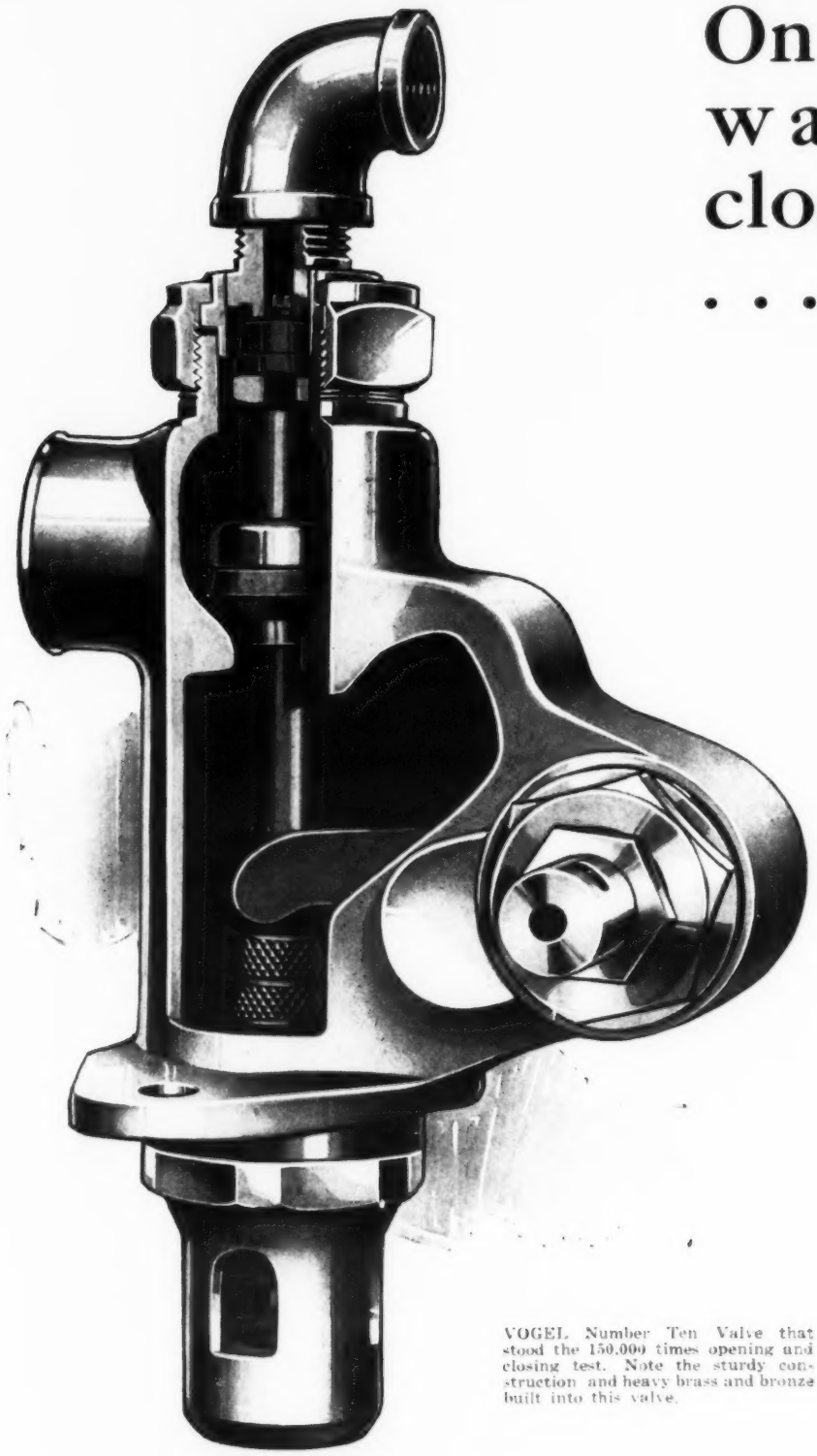
THE AMERICAN School Board Journal

A PERIODICAL of SCHOOL ADMINISTRATION



May, 1929

THE BRUCE PUBLISHING COMPANY
CHICAGO MILWAUKEE, WIS. NEW YORK



VOGEL Number Ten Valve that stood the 150,000 times opening and closing test. Note the sturdy construction and heavy brass and bronze built into this valve.

On a test this valve was opened and closed 150,000 times ....*and didn't show a sign of wear*

VOGEL PATENTED NUMBER TEN

The seat-action closet combination to install in schools

All parts are made to stand up under hard use. Bowl is heavy vitreous china, flawless and glistening white. Seat is close-grained hardwood, but can also be supplied in indestructible rubber composition.

Install the Number Ten, the closet combination that looks well and is never out of order.

NO HARD OPERATION REQUIRED TO FLUSH

The VOGEL Number Ten is made by a concern that has specialized on seat-action closet combinations for 20 years and has made more than half a million such combinations. These are in use throughout the United States, Canada, and Mexico.

The valve is bolted on the shelf at the back of the closet and makes the strongest kind of a connection, proof against leak under any condition.

JOSEPH A. VOGEL COMPANY

Wilmington, Del. St. Louis, Mo.

VOGEL PATENTED *Products*

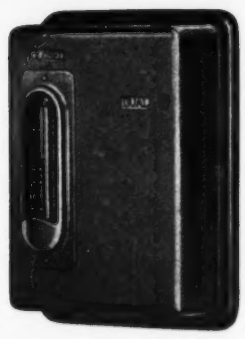
20 Reasons for their Popularity

Did you ever stop to consider why the slate blackboard has always been the most popular blackboard in schools and universities? Here are twenty of the primary reasons. The quality of slate that has been recognized in every school for centuries is the reason for their popularity. No amount of wear can destroy them. Chalk dust year in and year out has no effect on these non-absorbent blackboards. They have no thin coating to wear off, peel or crack. Don't be satisfied with "just as good." Get a blackboard that is a real board all the way through. They will outlast the building and pay you dividends in economy. Your copies of two interesting books on slate blackboards will be mailed promptly upon receipt of your request.

1. Ideal writing surface.
2. Will never warp or buckle.
3. Can be cleaned daily.
4. Slate is non-absorbent.
5. Easily read from any position.
6. No finish to wear off.
7. Even, smooth, velvet-like finish.
8. Fire-proof.
9. Not affected by chemicals.
10. No glare to slate.
11. Always a neat, uniform appearance.
12. In use for centuries.
13. The first cost the only cost.
14. Easy on students' eyes.
15. Outlasts the building.
16. Specified by every leading architect.
17. Will never peel nor crack.
18. Used in every leading university and college.
19. The only sanitary board.
20. Can be washed with disinfectants.

Natural Slate Blackboard Co.

540 ROBINSON AVENUE, PEN ARGYL, PENNSYLVANIA



The All Metal System The All Perfect Graduated Control of Valves & Dampers The Dual Thermostat (Night & Day) Control. Fuel Saving 25 to 40 per cent Per year.

JOHNSON HEAT & HUMIDITY CONTROL

In School Buildings Since 1885 . . . . .

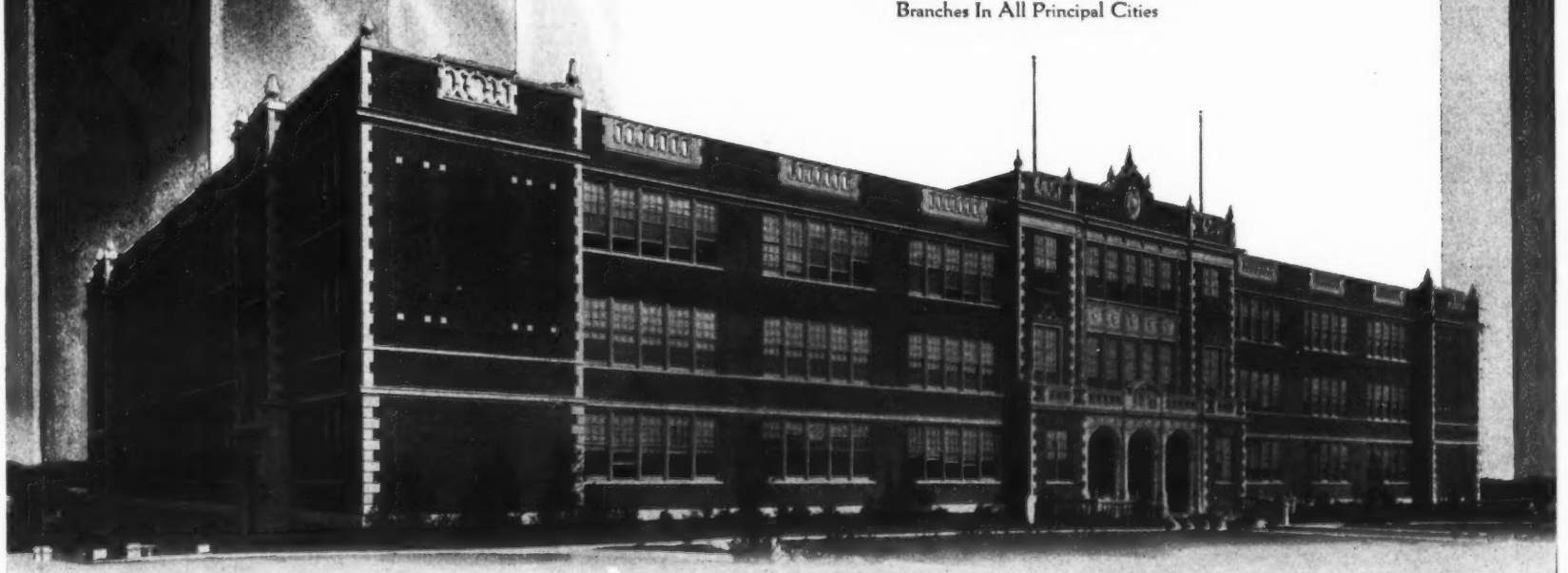
THE Johnson System Of Heat And Humidity Control was invented and given to the world forty-four years ago—by Prof. W. S. Johnson, then on the teaching staff of Whitewater Normal School, Whitewater, Wisconsin.

Observing as school teacher the ill effects and fuel extravagance of over-heating his school's study and recitation rooms, Prof. Johnson experimented for many years toward a means of maintaining consistent and correct temperature condition, and also minimum fuel consumption.

The result, in short, was The Johnson System Of Heat And Humidity Control—established in 1885 and in school buildings all over America ever since: automatically and most reliably maintaining correct temperature as required night and day, and producing fuel economy results of 25 to 40 per cent.

The Johnson System is basically correct—in principle, design, construction and operation: and its long enduring years of existence, with the service and success given users, proves positively its worth and worthiness.

JOHNSON SERVICE CO.
MILWAUKEE. WISCONSIN
Branches In All Principal Cities



C. E. BYRD HIGH SCHOOL
SHREVEPORT, ... LOUISIANA

EDWARD F. NEILD . . . . . Architect
R. F. TAYLOR . . . . . Mech. Eng.
DIXIE HTG. & VTG. CO. . . Contractor

EQUIPPED WITH JOHNSON HEAT & HUMIDITY CONTROL

If the First Cost is too low - - the Final Cost will be too high

Any maker can build a low priced boiler. But to do so, he must take something out of it—something that lessens the boiler's life, and *decreases its efficiency*.

So that any saving on the purchase price is soon swallowed up by the higher fuel and upkeep costs.

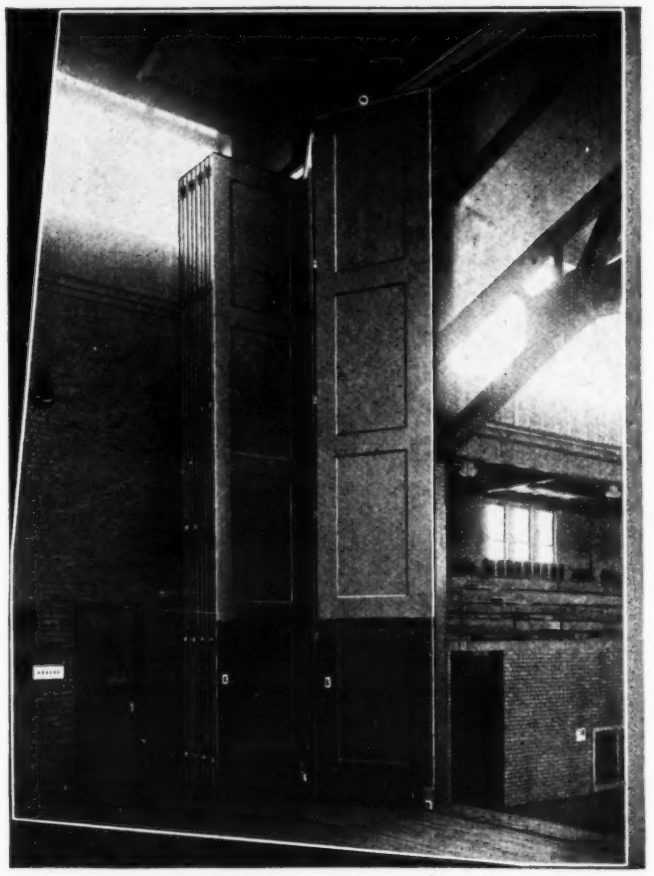
Kewanee Boilers are built (of steel, riveted) according to designs and specifications which 50 years of building have proved are right. And they are priced fair enough to permit putting into them the necessary quality of steel and quantity of rivets for husky joints to stand the gaff of many years hard service.

KEWANEE STEEL BOILERS

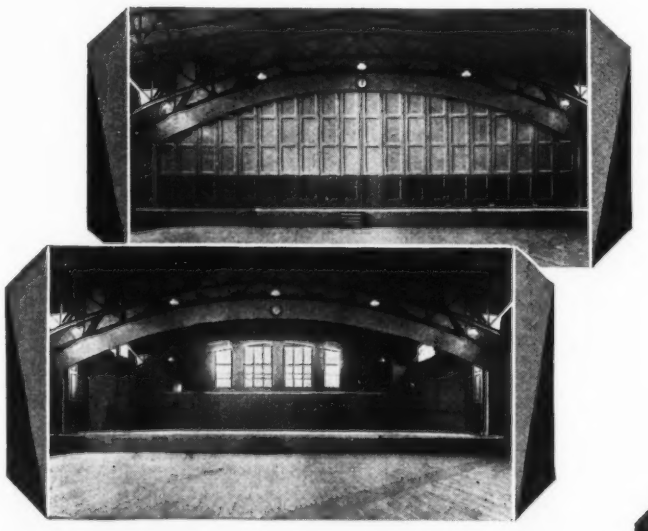
Hence in building from the boiler up the user of a Kewanee can rely on many extra years of "service", plus a fuel saving during every year of its life.

KEWANEE BOILER CORPORATION

Kewanee, Ill. Branches in Principal Cities



Twenty R-W FoldeR-Way doors, each 24 feet high, 4 feet 2 inches wide and 3 inches thick, form the sliding, folding, disappearing wall which closes the 83 foot wide opening between the boys' and girls' gymnasiums in the New Trier High School, Kenilworth, Ill.



The whole wall disappears and reappears with FOLDER-WAY!

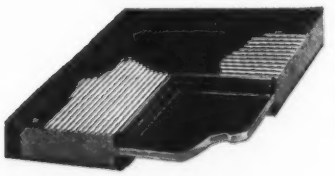
The high cost of floor space and the necessity for making one big room do the work of two or more smaller ones—this is the problem which finds its complete solution in FoldeR-Way equipment.

With FoldeR-Way, the wall is built to fold and slide away out of sight and to slip quietly and easily back into place at will.

The exclusive features of FoldeR-Way equipment assure certainty of operation that places R-W above and apart from all competition in the field of doorway engineering and equipment.

No opening is too large for FoldeR-Way. No problem is too intricate for R-W engineers. Write today for Catalog No. 43.

The beauty and smooth operation of R-W Compound Key Veneered doors are LASTING. *Sagging, warping, swelling, shrinking, are practically eliminated by tongue and groove method of applying extra heavy sawed veneer to rails and stiles of laminated core construction. Sold exclusively by Richards-Wilcox.*



FoldeR-Way flush bolt, two being required when doors divide at center, one when doors all fold one way. Brass or dull black finish.

"Qualsty leaves its imprint"

Richards-Wilcox Mfg. Co.

"A Hanger for any Door that Slides"

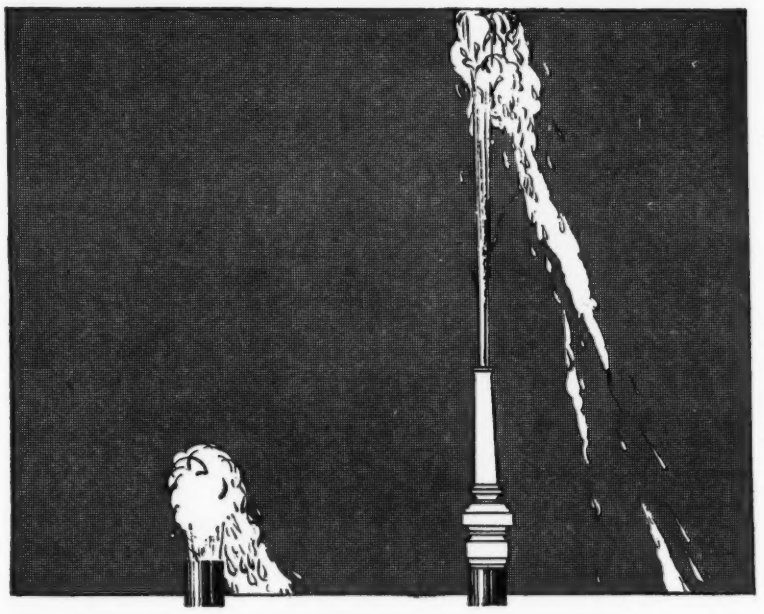
New York . . . . AURORA, ILLINOIS, U.S.A. . . . . Chicago

Boston Philadelphia Cleveland Cincinnati Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City Atlanta Los Angeles San Francisco Omaha Seattle Detroit

Montreal • RICHARDS-WILCOX CANADIAN CO., LTD., LONDON, ONT. • Winnipeg

The high velocity obtained in the stream of water from a fire hose by the use of a nozzle illustrates the Pacific side-connection principle. By confining rising steam and water to restricted outlets, forced circulation results.

Forced circulation in the Pacific



Why a nozzle on a fire hose? Necessity for velocity!

How do you get velocity? By reducing the diameter of the orifice!

A simple and well-known principle of hydraulics.

Apply this principle to the well-known fact that the ability of water to absorb heat from a surface is proportional to the velocity of flow of the water across that surface, and you have a picture of the positive circulation feature in the Pacific Steel Heating Boiler.

The Pacific side-connections do the work of the hose nozzle. The steam and hot water, instead of rising sluggishly through free waterways between the fire-box water-jacket and the shell (as in other boilers), is shot up through properly proportioned connecting orifices into the shell and across the boiler tubes at a high velocity.

PACIFIC

STEEL HEATING BOILERS

AND CAPITOL RADIATORS MAKE A LOGICAL COMBINATION

Result: Steam bubbles that form on and insulate the tubes are "scrubbed" off by this forced circulation. A greater amount of heat is thus absorbed by the water.

There is a Pacific installation for your next building which will give you the maximum in fuel economy with greatest ease in maintenance. Write for literature on all types of installations.

PACIFIC STEEL BOILER CORPORATION
Factories: Waukegan, Ill., Bristol, Pa.
Sales Offices in 58 Cities
Division of United States Boiler Corp., Detroit, Mich.

Five Advantages of the Spencer Cleaning System

The Spencer Central Cleaning System is endorsed by leading architects and educators because of its distinct advantages over any other methods. The principal features are as follows:

1

Higher standards of cleanliness. The central system is the only method which removes all dirt and dust from the room.
With light tools, and inlet valves spaced conveniently in every room, the time required to clean the building is reduced. All moving parts are located in the basement and designed for long life service without repairs.

2

Saves Decorations. Because there is no dust, the need for frequent washing of walls, furniture, etc., is not necessary. This saves on painting and redecorating costs.

3

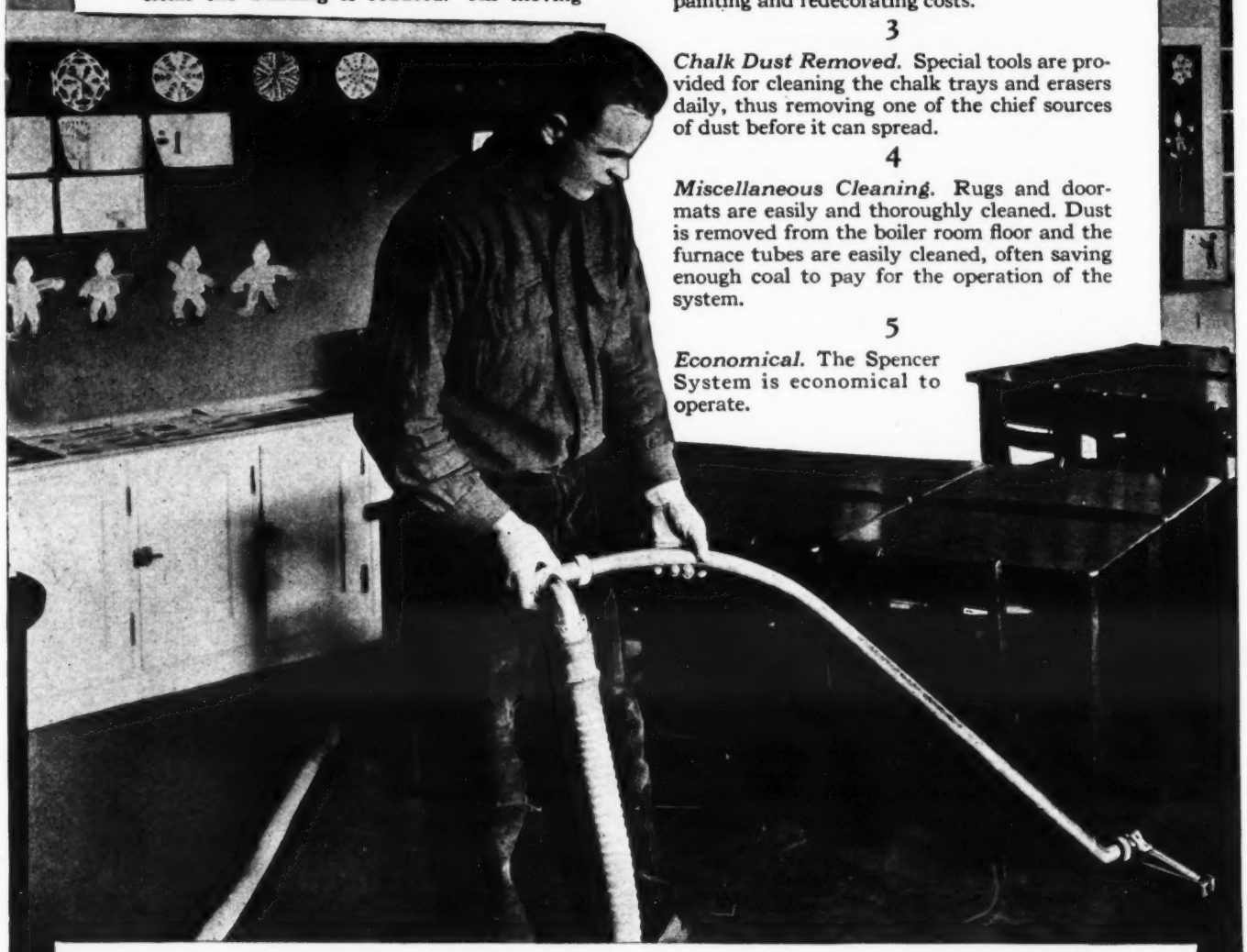
Chalk Dust Removed. Special tools are provided for cleaning the chalk trays and erasers daily, thus removing one of the chief sources of dust before it can spread.

4

Miscellaneous Cleaning. Rugs and doormats are easily and thoroughly cleaned. Dust is removed from the boiler room floor and the furnace tubes are easily cleaned, often saving enough coal to pay for the operation of the system.

5

Economical. The Spencer System is economical to operate.



Send for this New Booklet

If you are interested in school design or management, we will gladly send you a copy of our new book "Modern Cleaning Methods for Modern Schools." It contains twenty-four pages of information and illustrations of more than a hundred modern schools.

THE SPENCER TURBINE CO.

HARTFORD, CONNECTICUT — CENTRAL CLEANING SYSTEMS — REPRESENTATIVES IN 50 CITIES

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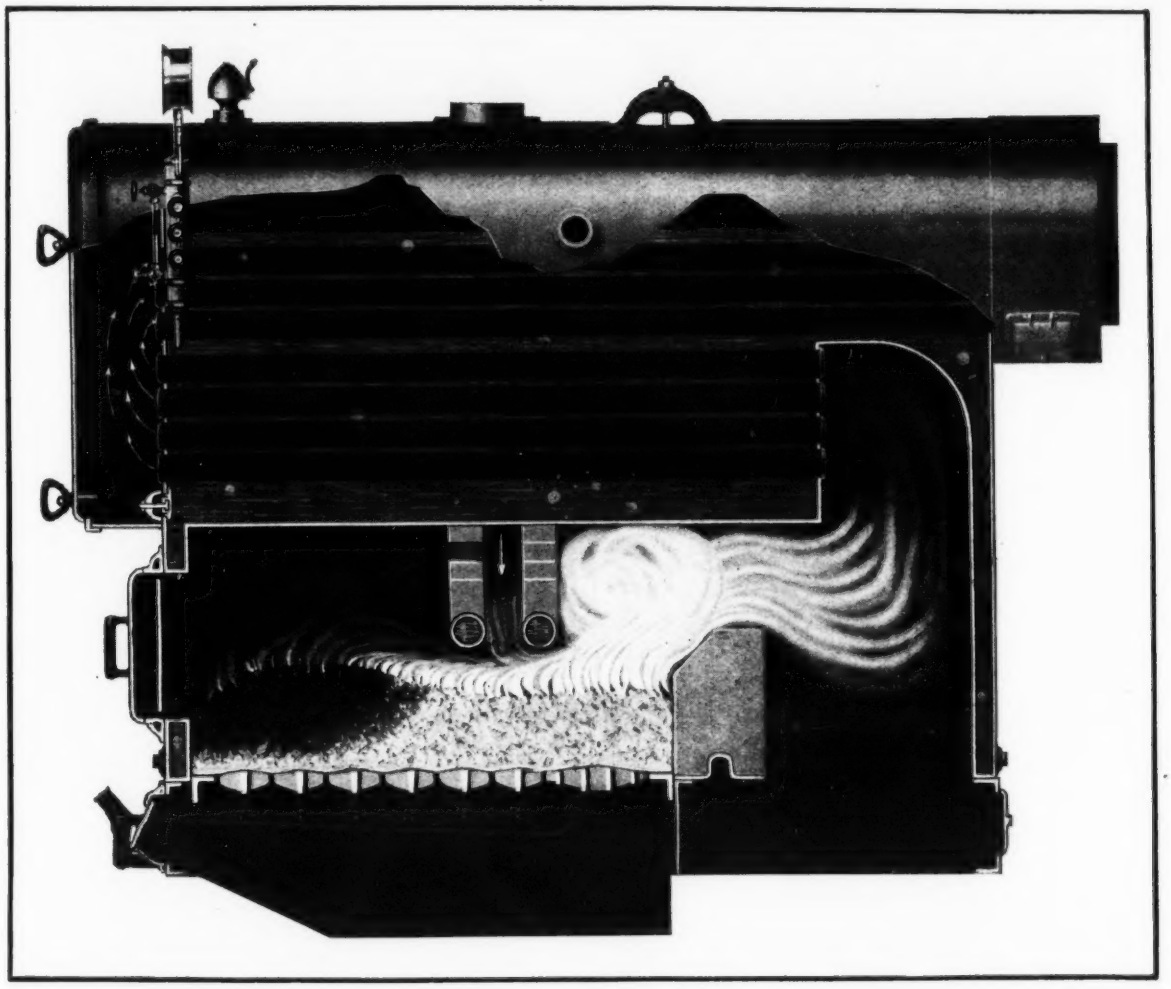


Heat—but No Smoke from Soft Coal

THE *new* Heggie-Simplex Smokeless Boiler burns the cheaper grades of soft coal efficiently, economically and in compliance with the most drastic smoke ordinances — without requiring especially trained firemen.

A special "carbureting chamber", made of *refractories*, introduces heated air over the fire (see arrow). It supplies the additional oxygen necessary to burn bituminous coal smokelessly, but which cannot be drawn through the fuel bed alone.

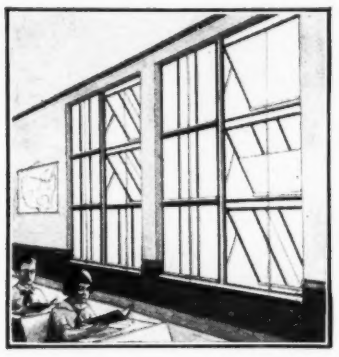
Intake doors on both sides of the boiler admit air into the "carbureting chamber". There it mixes with volatiles arising from the fresh fuel and is thoroughly heated by the *refractory* walls before passing down onto the fire. This inflammable mixture unites with the soot laden gases streaming under the chamber and is swept against the rear bridge wall. The turbulent whirlpool of flame which results, completely mixes and ignites all combustibles. The auxiliary chamber beyond the bridge wall provides the room essential to complete combustion. Thus, regardless of the amount fired, only smoke-free gases enter the flues.

For descriptive folder write Heggie-Simplex Boiler Company, Joliet, Ill. Representatives in principal cities—telephone and address listed under "Heggie-Simplex Boilers."

HEGGIE-SIMPLEX

STEEL HEATING BOILERS

HEALTH
Enters Through These
WINDOWS

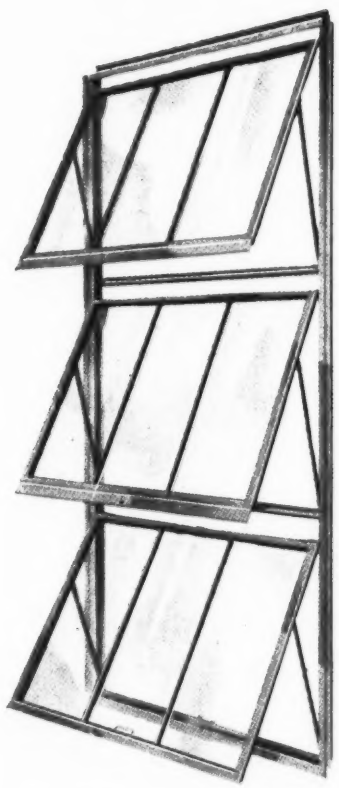


TRUSCON
DONOVAN
AWNING TYPE
STEEL WINDOWS

Truscon Donovan Awning Type Steel Windows are ideal for the modern school. They permit fresh air without drafts—sunlight without glare — proper natural ventilation and daylighting and save the eyes of school children. A child can operate Donovan Windows—movement of the lower sash controls the upper ones—no window poles required. Shades attached to each sash eliminate awnings.

Modern production methods enable us to offer these superior windows at a cost which makes them practical for any school.

Write for suggestions, quotations, and catalog.



Truscon Donovan Awning Type Steel Windows are furnished in types and sizes to meet any requirement.

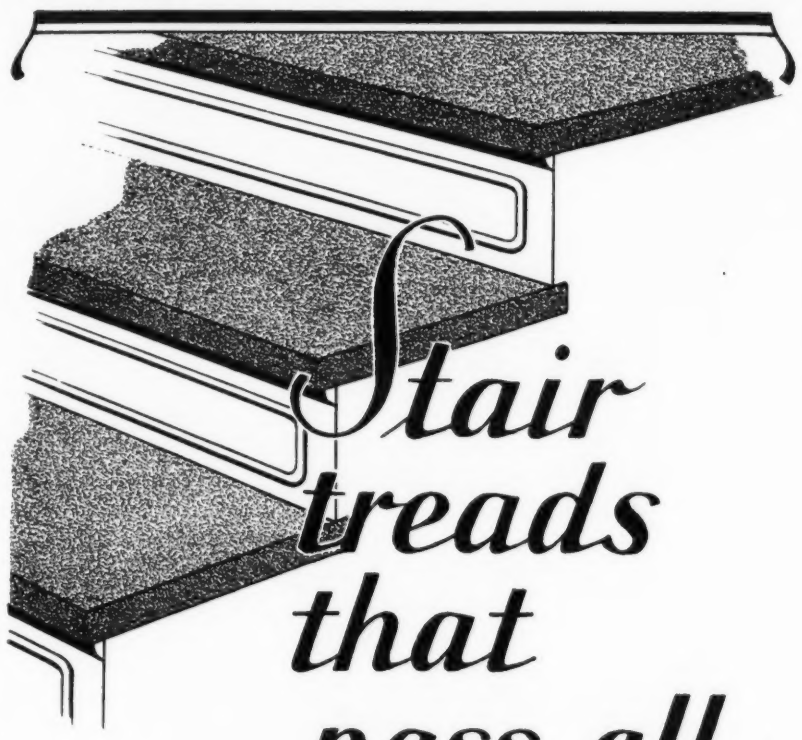
TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO

Represented on the Pacific Coast by
The Universal Window Company, 1916 Broadway, Oakland, Calif.

STEEL WINDOW DIVISION

THE SECRET ΔΓM OF SUCCESS

OFFICES IN ALL PRINCIPAL CITIES



Stair treads that pass all school tests . . .

Stair treads in schools must be durable if they are to be economical. Alberene Stone treads are solid quarried soapstone slabs, wear-proof and weather-proof.

Treads must be slip-proof to prevent accidents. Alberene Stone assures safe footing even on wet days because of its natural abrasive content.

Stairs must be attractive in appearance. Alberene's blue-gray color is pleasing, neutral, restful.

Stairs must be easy to clean and keep clean. Alberene Stone is moisture-proof and stain-proof — permanent sanitation is a simple matter.

Then for hallways and landings, remember that Alberene Stone Tiles offer all these advantages plus a distinct decorative quality.

Our School Bulletin contains interesting data—we'll gladly send you a copy.

ALBERENE STONE COMPANY,
153 West 23rd Street
NEW YORK, N. Y.

Branch Offices at: Chicago Pittsburgh Cleveland Boston Newark Philadelphia Richmond Washington, D. C.
Quarries and Mills at Schuyler, Va.

AS-174

ALBERENE STONE

TOILET PARTITIONS SHOWER STALLS STAIR TREADS and LANDINGS

Von Duprin

Self-Releasing Fire Exit Latches

Sweets, Pages B2605-B2609

AIA 27c5

Of course we realize that there are many ways of making panic devices cheaper, but what we want is some way of making them better -- stronger -- and more reliable than even Von Duprins now are.

VONNEGUT
HARDWARE CO.
Indianapolis, Ind.

Is a Double Standard

of Cleanliness allowable in American Schools?

CAN we expect from pupils, clean habits of person and of thought if we still permit insanitary and inefficient methods of cleaning the school buildings in which the children spend so large a part of their time?

Well ventilated classrooms with walls tinted in pleasing tones, plenty of light and *clean floors* are bound to have an effect upon the impressionable child. Children from the most slovenly homes will receive a new impulse to cleanliness in such an atmosphere.

Floor cleaning methods in schools are important. Hand methods simply will not do. It is an established fact that cleaning by hand will not get the dirt off an ordinary floor. What then can it do with a floor which bears the traffic of hundreds of feet each day—feet which are none too careful of where they walk.

Many of the leading educational establishments of the country are enthusiastic users of the FINNELL Floor Machine, for polishing or scrubbing floors. They have found that it *meets the need*. School superintendents and school board members everywhere should urge an investigation of the FINNELL SYSTEM so that floor cleaning methods in their schools may be placed upon a proper basis.

It matters not what kind of floors or floor coverings may be used in your building, nor how large the building may be, nor how many buildings you may have. All floor requirements can be taken care of efficiently, with a system adapted to meet your needs from the eight different sizes of FINNELL Scrubbers. You may scrub a large area such as a dining-room, assembly room, or corridor, and then use the same machine to wax and polish your gymnasium floor.

A survey of your school building or buildings entails no obligation whatever and will reveal definitely just what equipment will be most economical as well as most efficient. We shall be glad to have a FINNELL engineer call and make such a survey. For full information address FINNELL SYSTEM, INC., 805 East Street, Elkhart, Indiana. Also 130 Sparks St., Ottawa, Ont., Canada. Factories, Elkhart, Ind., Hannibal, Mo., and Ottawa, Ont., Canada. District offices in principal cities.

8 sizes priced from $87.50 to $950.00

It scrubs
It waxes
It polishes

FINNELL

ELECTRIC FLOOR MACHINE

"NONCO" Brand of Plumbing Goods — N.O. Nelson Mfg. Co.

For Dependability Utility and Design

Choose

"NONCO" PLUMBING FIXTURES

With a reputation for positive, trouble-free operation and service consistently maintained for over 45 years, "NONCO" Plumbing Fixtures are today the accepted standard for Dependability.

From the standpoint of Utility, which in such large measure controls economy, "NONCO" is likewise nationally famous.

And for Beauty of Design—so important in the modern, architecturally correct school building of today—"NONCO" admits no superiors.

Whatever your plumbing problems may be—feel free to call on "NONCO" engineers for the expert advice which they offer without placing you under the slightest obligation.

N.O. NELSON MFG. CO.

Pioneer Manufacturers of Plumbing Fixtures for Schools

Main Office: St. Louis, Missouri

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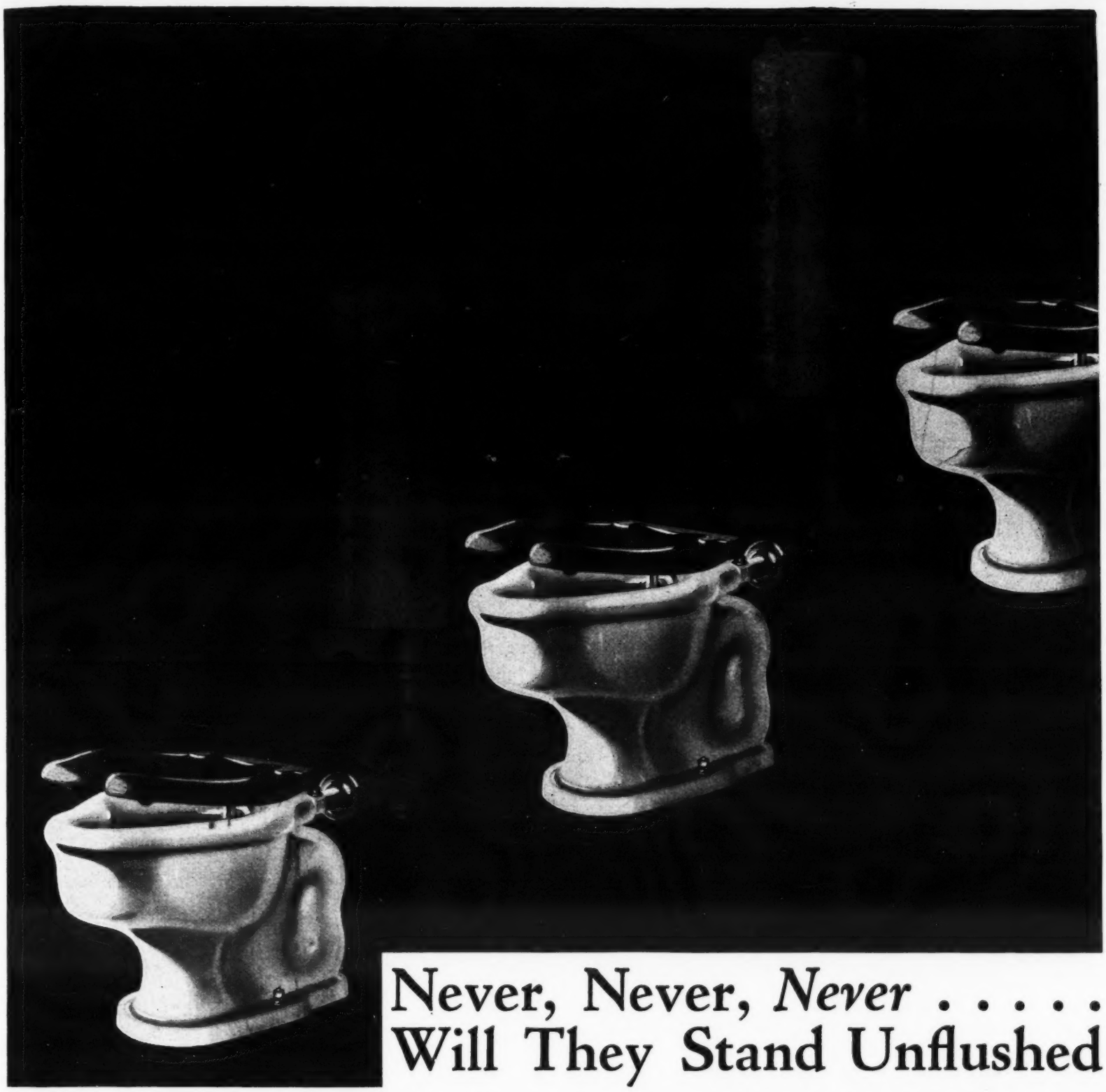
"NONCO" Brand of Plumbing Goods — Trade Mark — N.O. Nelson Mfg. Co.



Never, Never, *Never* . . . . . Will They Stand Unflushed

Record No. 102

After 24 years' service at the Bingham School, Lansing, Michigan, the total repair bill on 24 Clow Madden Automatics amounted to *just five dollars!*

No one, *no one* can use a Clow Madden Automatic, and let it stand unflushed. Clow Madden Automatics flush themselves . . . more *swiftly* than human hands can operate . . . more *surely* than human minds can function.

With Clow Madden Automatics, sanitation does not wait on the hurried workman, the play-thoughtful child, the heedless transient closet user.

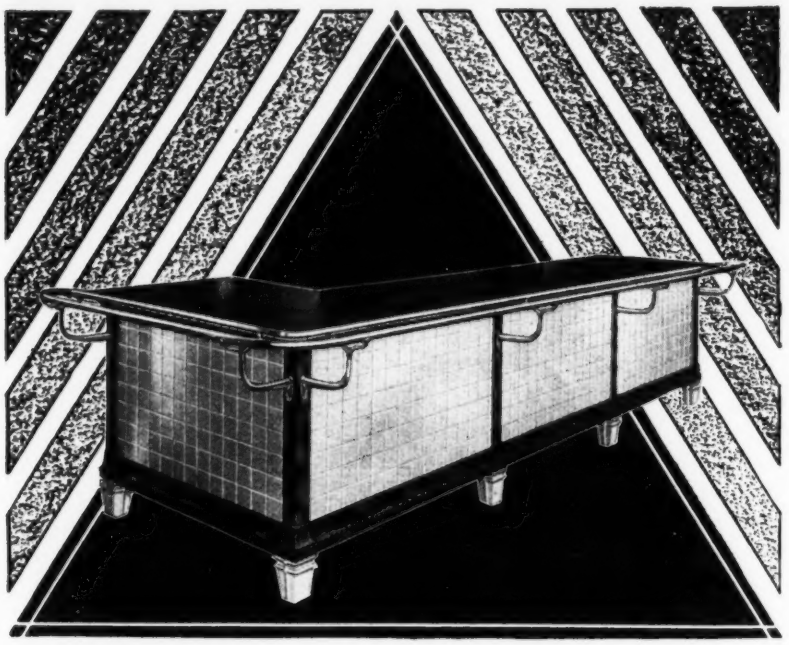
Swiftly, surely, all residue is whisked away in an engulfing torrent of water. Bad odors, flies, lice, germs, can't exist in Clow Madden Automatics.

A simple valve . . . a closed top tank . . . a bowl with no eddy or backwash hollows . . . these insure a perfect flush each time the seat is used. Read record No. 102.

James B. Clow & Sons, 201-299 N. Talman Avenue, Chicago

CLOW MADDEN AUTOMATIC

Forty-Eight Styles, Heights and Types to Meet Your Requirements

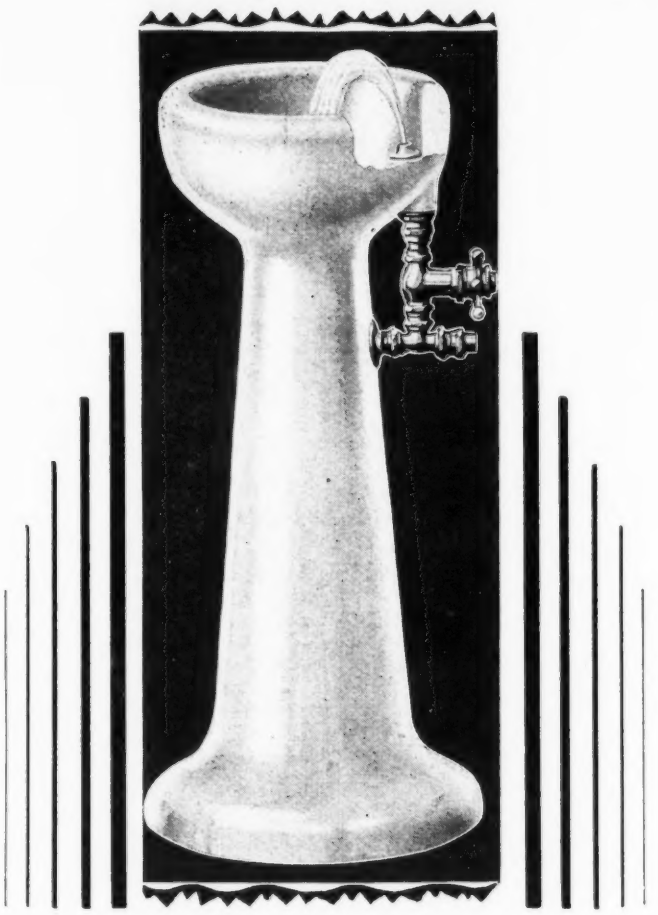


THIS new Sani Siebert Cafeteria counter is one popular model of the great *Sani* line. The reasons are obvious when you know how attractive, strong and serviceable it is. A sectional counter—shipped knocked down—can be easily set up with a pair of pliers and a screw driver. No installation trouble whatsoever. You may have practically any panelling material desired. Write today for circular fully illustrated in colors.

SANI PRODUCTS CO.
North Chicago, Ill.

Selling Organization for
Chicago Hardware Foundry Co.

Sani Products



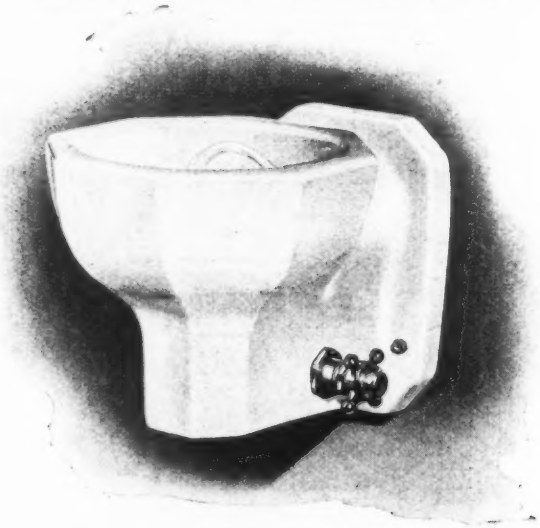
"Bubblers" *For All Needs!*

REGARDLESS of the service— there is a Rundle-Spence Vertico-Slant Fountain that will provide the most practical and sanitary drinking.

Lips cannot touch the R-S nozzle—the contamination of lip-contact is automatically eliminated. The slight slant stream prevents water from falling back upon the jet.

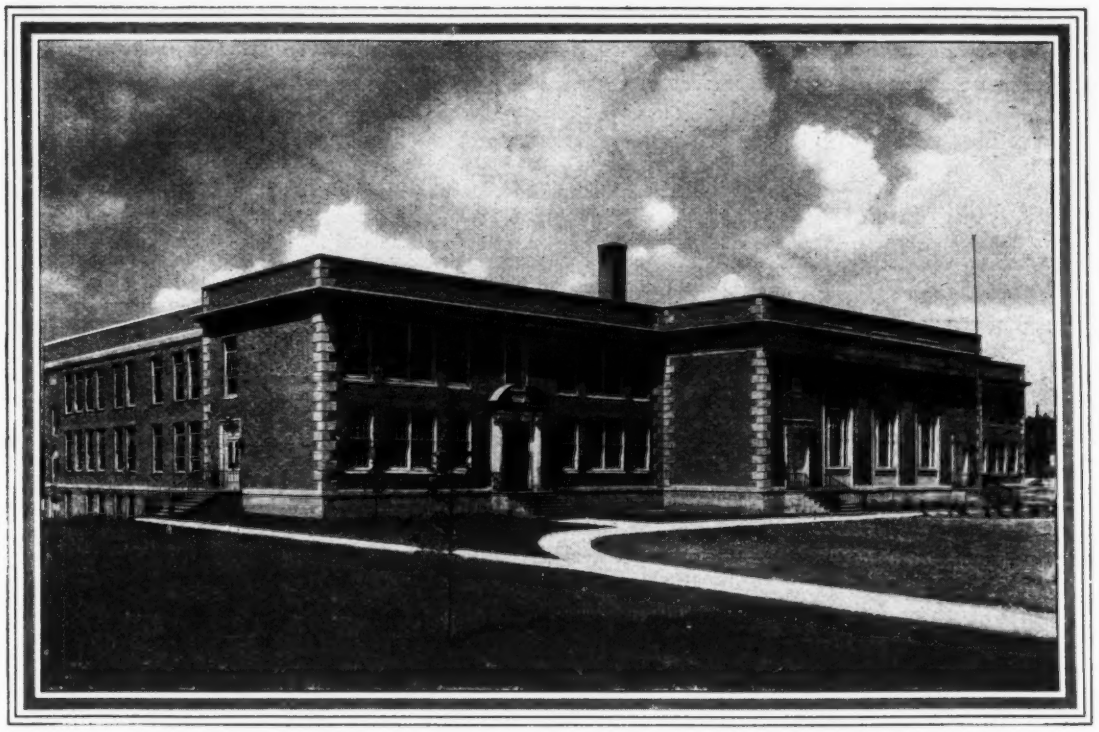
Let us give you complete information on R-S Drinking fountains.

RUNDLE-SPENCE MFG. CO.
51-Fourth Street, Milwaukee, Wis.



RUNDLE-SPENCE

150 Pounds Pressure CRANE VALVES 2500 Pounds Pressure



The City Park Junior High School, Knoxville, Tenn., is Crane equipped throughout. Architect, Bauman & Bauman, Knoxville, Tenn. Plumbing and Heating Contractor, F. W. Walsh, Knoxville, Tenn.

Crane Service to Schools

As school practice has advanced Crane engineers and designers have kept pace with its progress. They have developed and refined fixtures and appliances to meet growing requirements. They have sought opportunities to increase the comfort of students and staff; to protect their health and raise their living standards.

In this work Crane Co. has been aided by the first hand experience it has gained through planning and installing satisfactory system in countless schools and universities throughout the country.

Thus the Crane line of plumbing and heating materials for school use has grown until it covers special as well as regular requirements, with materials that not only give the ultimate in satisfaction and convenience, but assure low installation and upkeep costs as well.

CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO
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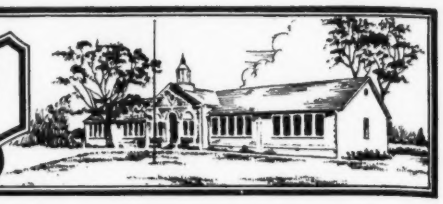
SCHOOL ARCHITECTS DIRECTORY



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Educational Buildings

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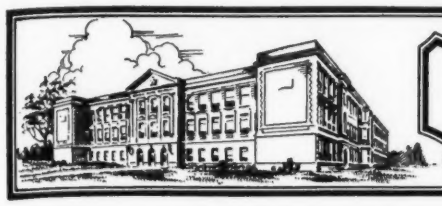

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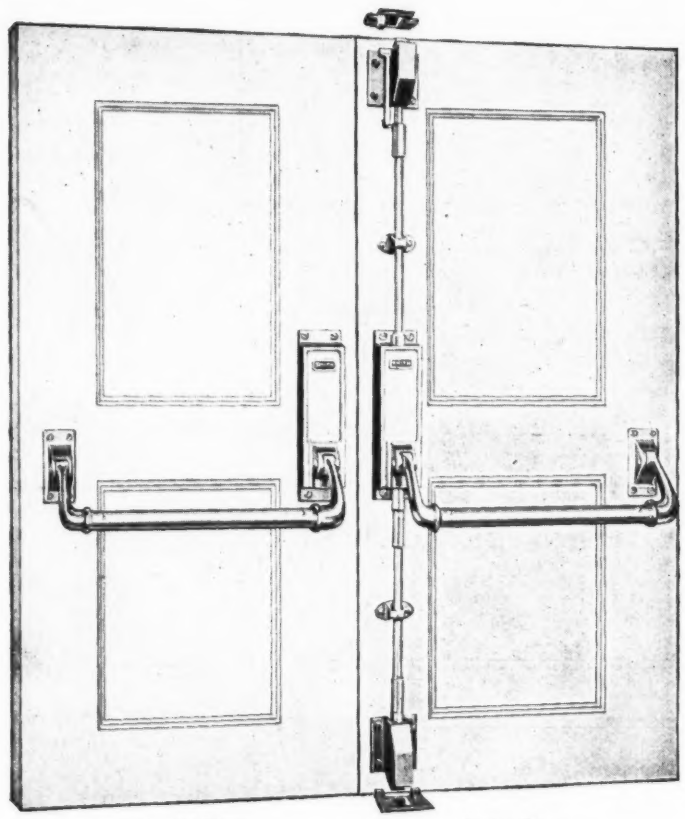

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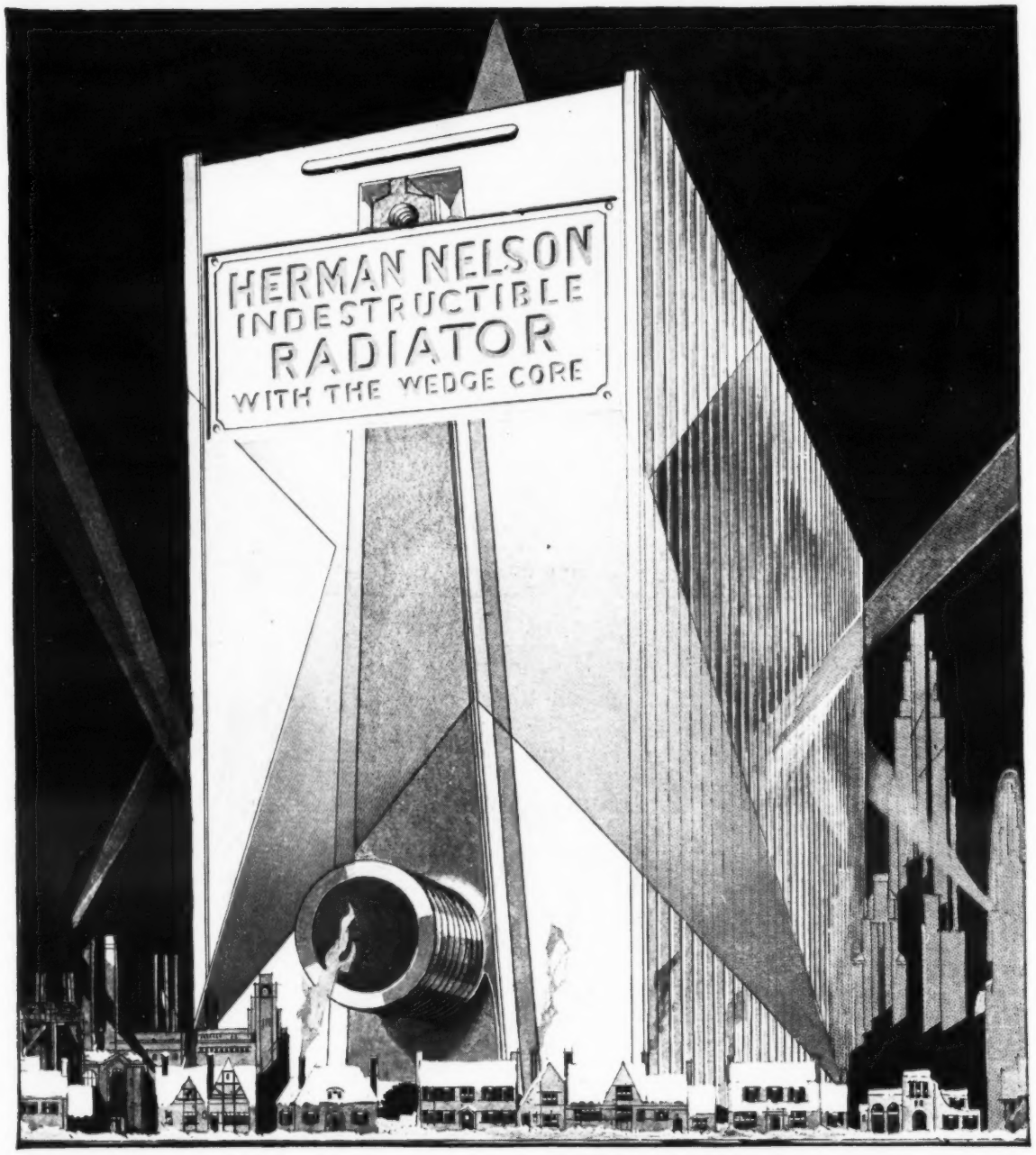

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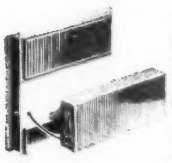

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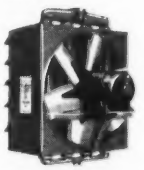

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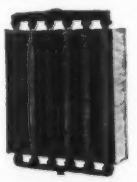

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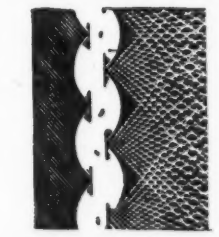

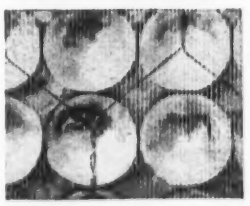

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The Theodor Kundtz Company

CHURCH AND ECLIPSE AUDITORIUM SEATING

SCHOOL FURNITURE

Cleveland Ohio, U.S.A.

"Kundtz Leads the Way"

The Theodor Kundtz Company
Cleveland, Ohio

Please send me immediately descriptive literature on Kundtz Eclipse School and Auditorium Furniture.

Name.....
Street.....
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16-5

SAMSON TABLES

NOW Is The Time To Install Them

You've probably spent time and money the past year experimenting with tables of unknown qualities. Now is the time to rid yourself of these worries for good by equipping your offices, libraries and other rooms with durable Samson Tables. It is a known fact that thousands of Samson Tables are still new in every sense of the word, some after more than 25 years of continuous service.

These qualities of lasting beauty, strength, and dignity are the result of years of experience in designing and construction. We have passed these on to you through our fine workmanship and materials and you will agree that the resultant economy decides your preference for Samson Tables.

SAMSON OFFICE TABLES DIRECTORS TABLES TRADE MARK REG. U.S. PAT. OFF. MUTSCHLER BROTHERS CO. NAPPANEE, IND., U. S. A.

This well-known Trade Mark is your Guarantee of Quality and Workmanship. Look for it on all of our tables.

Our latest descriptive catalog on school and cafeteria tables will be mailed on request.

Mutschler Brothers Co.
Nappanee Indiana

No. 321—Quartered Oak

GUNN

LIBRARY FURNITURE, MECHANICAL & ART DRAWING TABLES, TEACHERS' DESKS, CAFETERIA TABLES

Made in Grand Rapids

"The Furniture Capital of the World"

GUNN Furniture is made by experienced craftsmen who have made furniture building their life's vocation. This insures highest quality of construction, cabinet work and finish.

No. 8062
With Inlaid Lino Top

— GUNN SELF-ADJUSTING TOP —
A Special Convenient Feature

Our Patented Self-adjusting Device permits adjustment of top at any angle by simply raising top to height desired. When top is raised to vertical position the adjustment ratchet is automatically released and top returns to flat position.

Book Truck
No. 8035

Some Territory Still Open for DEALERS

Write for Catalog

THE GUNN FURNITURE CO.
Grand Rapids, Michigan

Thirty Years Builders of Office Desks and Tables

Achievements

THIRTEEN exclusive features —the strength of a modern skyscraper—every child seated with the proper posture, —not a manufacturing expedient,— not a "price" expedient. Built to an ideal, — the new "Royal" Movable.

THE ROYAL CHAIR
"A Lifetime Chair"

ROYAL METAL
Manufacturing Company
1130 So. Michigan Boulevard
CHICAGO

Sturdy!

Here's a bronco he can't bust!

The STAKMORE Special for Schools

THE STAKMORE SPECIAL is the strongest, lowest cost folding chair on the market.

The construction of this chair is so simple that there are only two joints, two moving parts, six rivets, and **no screws!** It will outlive three ordinary folding chairs under school and educational conditions.

The STAKMORE SPECIAL comes in one finish only — varnish-on-wood. The seat and back are three-ply veneer.

Six of these chairs fold into 7½ inches!

ADDITIONAL STAKMORE CHAIRS RECOMMENDED FOR SCHOOLS.

BENTSTEEL

All-metal frame with wood or upholstered seat and back. Nothing to catch fingers or clothes. Simple in operation. Rubber slippers on the feet prevent scratching and make classrooms quiet. For those who want the best in an all-steel folding chair. The quality and price will interest you.

STANDARD

This bentwood chair has been the leader of the **Stakmores** for years. This is the all-round chair. Useful wherever a dignified, strong, comfortable folding chair is needed. Seasoned frame in fumed oak, mahogany, green, or gray. Upholstered seats.

THE upkeep of STAKMORE SPECIALS cost practically nothing. There are no screws to get loose.

These chairs can be stood on, piled up, and mistreated (as sometimes happens when red-blooded young Americans are using them) without damage.

The STAKMORE SPECIAL is recognized everywhere today as the world's standard low-cost folding chair. At the startling price reductions announced a few months ago, this chair is sweeping the country in popularity and sales.

Years of experience have taught us how to handle contracts for schools at lowest costs.

STAKMORE Aristocrats of Folding Furniture

Write or wire for lowest prices or ask for our representative to call.

STAKMORE CO., INC.
200 Madison Avenue, New York.

Let us quote on your folding furniture needs and show you samples of STAKMORES.

STAKMORE Aristocrats of Folding Furniture

Indestructo Sani-Steel Desks and Chairs

STANDARD INDESTRUCTO ADJUSTABLE MOVABLE DESK

Seat of standard scroll either plywood or solid at same price. Saddled seat will be furnished on request. Top of standard rectangular pattern with flush top inkwell. Top is adjustable in height, in tilt, and has an adjustable leveling device. Wood parts are of hard maple, walnut finish. (Oak will be furnished on request.) Seven plywood top, for 20c additional.

No. 330-1 and 2 @ $5.30; No. 333 and 4 @ $5.15; No. 334 and 5 @ $4.90.

A NEW MEMBER OF THE INDESTRUCTO FAMILY

—a steel tube indestructible frame, with plywood, form-fitting seat and back.

THE COLUMBIA INDESTRUCTO ADJUSTABLE MOVABLE DESK

The top is adjustable in height, in tilt, and has a leveling adjustment not possessed by any other desk.

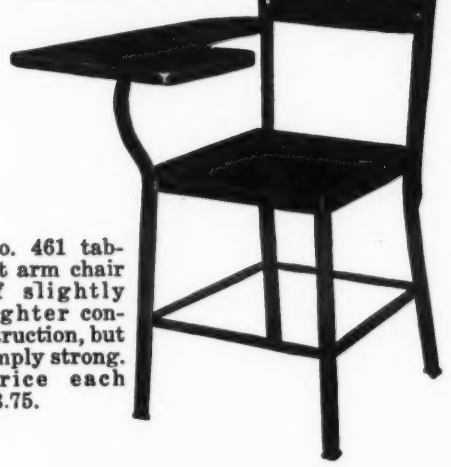
Wood parts are of oak, finished dark golden, while the steel frames are finished olive green.

No. 400-1 and 2, $4.95; No. 403 and 404, $4.80; No. 405 and 6, $4.65; B Drawer, $1.00. Inkwells with steel swinging holders..$0.15
Back panel above bookshelf..... .20

SANI-STEEL INSTRUCTOR'S DESKS

This desk may be had with two drawers at $13.00; four drawers at $17.00; with five drawers at $19.50. It has a steel frame and body that is finished dark olive green. The top and drawers of five-ply built up quartered oak, finished dark golden.

Shipping Weights — Large 34 lbs.; medium 28 lbs.; small 24 lbs.; drawers 7 lbs. 6 and 6; steel shelves 2 lbs; 1½ and 1.



No. 461 tablet arm chair of slightly lighter construction, but amply strong. Price each $3.75.

COLUMBIA INDESTRUCTO

Above is an illustration of the Columbia Indestructo Tablet Arm Chair. Back slats are of quartered oak, while the seat and arm are of plain oak or maple. Price of each $4.25; with perforated shelf $.25 extra.

No. 450 TEACHERS' CHAIR

May be used for Teachers, Visitors, Cafeteria, or the Library. Oak seat and quartered oak back are finished dark golden or brown. Has an olive brown steel frame. Priced at $2.85 each.

No. 65 STEEL BOOK CASE WITH DOORS

Impervious to rats, mice or other vermin as well as fireproof. It will keep your libraries in good condition during vacation months as well as during the school term. The shelves are of wood, for better surface for the books, and are adjustable.

Dimensions: 12 in. deep by 40 in. wide by 55 in. high, each.....$30.00

COLUMBIA INDESTRUCTO KINDERGARTEN CHAIR

Sturdily constructed with a saddled oak seat and curved quartered oak back and a solid steel frame. Made in three sizes. One dozen weigh 110 lbs. and are priced at $16.00. Also the Elementary Tablet Arm Chair at $21.00 per doz.

TABLET ARM CHAIR
No. 420

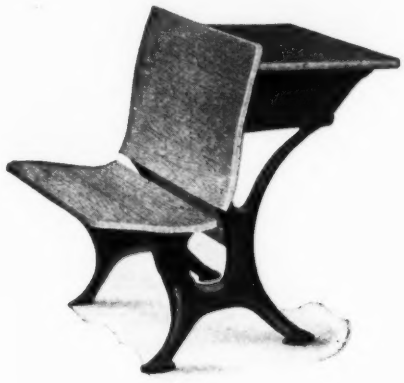
COLUMBIA SCHOOL SUPPLY COMPANY
INDIANAPOLIS, INDIANA.

CHAIRS - DESKS - FOLDING CHAIRS - COMBINATION DESKS - ADJUSTABLE DESKS - THEATER CHAIRS

A COMPLETE LINE

Unexcelled in Design and Honestly Built

Right — Theater Chair No. 600A. is the Ideal seating equipment for school auditoriums.



Left—The "Panama" combination desk with noiseless hinge and the new Double Lip and Undercut method of joining wood and iron.

Below—Peabody Portable Assembly Chair Sections are *built* together — not simply individual chairs fastened to long section strips.

Below — The most popular folding chair made is the famous Peabody No. 70.

North Manchester

Twenty-six years of square dealing with American Schools has firmly established the Peabody reputation for quality of product and quality of service. We offer you without cost, the service of our seating experts in the solution of *your* problems.

Send for the latest Peabody Catalog.

The Peabody Seating Co.

Formerly the Peabody School Furniture Co.

Indiana

TABLET ARM CHAIRS - RECITATION SEATS - MOVABLE CHAIR DESKS - TEACHERS' DESKS - ASSEMBLY CHAIRS

Modern Schools have Adopted this Inkwell

Air-Tight — Non-Evaporating — Dust-Proof

Here is the new, improved, all-hard-rubber Sengbusch Self-Closing Inkstand. No breakage, saves books and clothes. No school can afford to do without them.

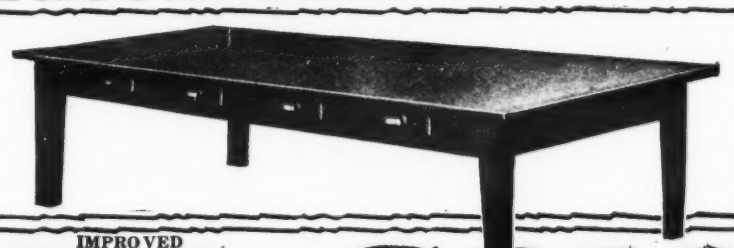
SAVES 75% OF YOUR PRESENT ANNUAL INK BILL

Adopted as standard by the business world. Millions in use giving satisfactory service. Simple to install, no special tools required. Further information will gladly be sent to you on request.

Sengbusch

Self-Closing Inkstand Company

218 Sengbusch Building, Milwaukee, Wis.



IMPROVED

ELGIN SCHOOL TABLE

Vacation Time Coming — A Good Time to Change

THE increased demand for the Elgin School Table indicates that modern schools demand modern methods. The new policy of "group instruction" in the first and second grades has improved pupils' progress and held their interest in school work, besides increasing the efficiency of teachers. The superiority of this method of instruction, obtained through the use of the **Elgin School Table**, recommends itself to all educators desiring to improve conditions in their schoolrooms.

Vacation time will soon be here. It is a good time to change over to this new and better system. Our booklet, "Seating Efficiency," will give you further details. Send for it now.

RINEHIMER BROS. MFG CO.
ELGIN, ILL.

DESKS THAT INSURE Last Hour Comfort

When pupils must turn in their seats to write comfortably, the body is thrown in a tiring position — the light strikes and tires the eyes, the posture being wrong brings weariness. Children let up on "last hour" studies, they get into trouble and worry the teacher.

Avoid last hour strain on the part of pupils and nervous strain on the part of teachers by equipping with **National Seats of Comfort** with the famous

MOESER EXTENDED ARM

Adds to Pupil's Comfort

In National Desks, equipped with the Moeser Extended Arm, pupils sit squarely in their seats. The back is supported when writing—working space is more than doubled —no turning to rest arm while writing—eliminates facing light and uncomfortable positions that bring on "last hour uneasiness." When writing the arm is supported, resulting in better penmanship. National Desks are shaped to conform hygienically to the human figure — they encourage correct posture — insure greatest comfort — less fatigue — less eye strain—better grades in last period classes and less worry and nerve strain on the instructor.

THE NATIONAL SCHOOL EQUIPMENT CO.

Manufacturers of Complete School Equipment

PORT WASHINGTON, WIS.

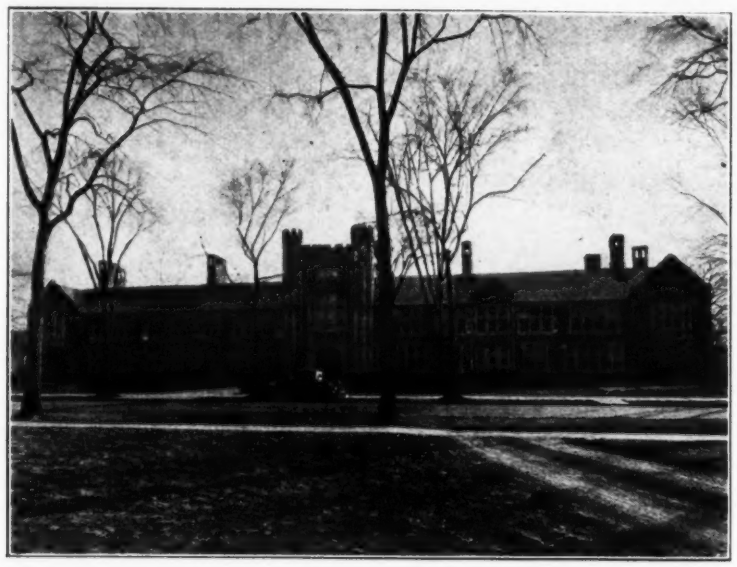
No. 101. Combination Desk with Moeser Arm Top. Standards finished in durable, baked enamel; woods, in National Process finish, both in a soft brown color.

Write for School Equipment Catalog

If you are a buyer of School Equipment you will want our latest catalog on School Desks. All types of school chairs and teachers' and office desks. We will send our catalog free and prepaid on request.

NATIONAL School DESKS

"Famous for Comfort"



Structural Slate for Every Use Should Come from a Single Source

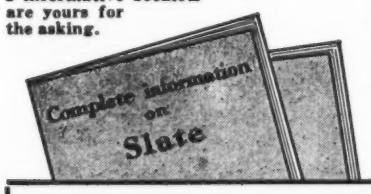
School Boards can waste a lot of time "shopping around" for slate — and time is money. What little you may save by buying your blackboards here, your stair-treads there, your shower stalls somewhere else, is offset by the time you spend.

Pennsylvania Structural Slate Company's slate is uniform in workmanship, finish, quality, color and price. Our service is as uniformly excellent as the slate. We shall be glad to consult at any time with School Boards on new buildings or additions.

Pennsylvania Structural Slate Company

First National Bank Bldg. Easton, Penna.

2 informative booklets are yours for the asking.



Clip and Mail Coupon —

PENNSYLVANIA STRUCTURAL SLATE CO., Easton, Pa.
(check square for information desired)

☐ **Please quote on.....square feet of Pennsylvania Structural Slate Blackboards, delivered to address below.**

☐ **Please quote on.....square feet of Eureka Cork Bulletin Board, delivered to address below.**

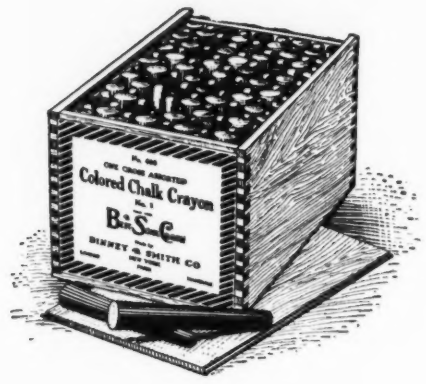
☐ **Please send specifications and setting instructions for Blackboards and Bulletin Boards.**

☐ **Plans are being forwarded for quotation on.....job.**

Name.....

Address.....City and State.....

☐ **Please send Catalog B on other Slate products.**



COLOR
On the Blackboards

OF course you know AN-DU-SEPTIC —probably have used it for years— that pure white dustless blackboard chalk now packed in the damp-proof metal box. But are you also using the superior colored chalks made by the same manufacturers—Binney & Smith Co. — and also guaranteed to give uniformly excellent results?

Color in the classroom for the vivid presentation of facts by figures and diagrams is a distinct aid to the teacher. Its use is steadily increasing with the approval of psychologists and superintendents. Let your school supply dealer quote you.

Also manufacturers of CRAYOLA Wax Crayons—the best known crayon in the world and the best color medium for every school use from kindergarten through college — and PERMA Pressed Crayons — for fine lines and velvety tonal textures.

CRAYOLA Wax Crayons No. 8—contains eight wax crayons in the most used colors. Paper wrapped, and packed in a tuck cardboard box. PERMA Pressed Crayon No. 81—contains eight pressed crayons, paper wrapped, and packed in a slide-tray, hand made box.

BINNEY & SMITH CO.

41 EAST 42 ST., NEW YORK, N. Y.

STEEL —the answer to your seating problem

Specifications for equipment in many schools now under construction in all parts of the U. S. include Steel seating for auditoriums and class rooms. Hundreds of leading schools all over the land are equipped with Steel seating, and in each case it is giving PERFECT service. Steel is the answer to your seating problem. The new Steel Bessemer desk is staunch and rugged to withstand the roughest kind of wear. Only the finest woods go into the construction of Steel seats and the finish is exceptionally durable. Steel seating is designed to seat the student in a correct healthful posture. Authorities agree that anatomically correct seating is necessary to good health. Steel seating is made in the furniture center of the world and you will make sure of complete satisfaction if your specifications include Steel seating. Our planning service is at your disposal without obligation to you. Find out about Steel seating. Write today.

DESIGNERS BUILDERS PLANNING SERVICE

STEEL FURNITURE CO.

GRAND RAPIDS, MICHIGAN

The Silent Giant
Champion of them all.

Arlington Seating Company

Arlington Heights
Illinois

An Achievement
20 Years
of
Satisfactory Service
in the Classrooms of America

Since 1908
The Silent Giant
has stood every test

HERE'S THE EVIDENCE

An extreme case from Alabama

"You may be interested in knowing that after several years of service we are highly pleased with the Silent Giant Desk. Our School Building was flooded with water during the September storm of 1926, and we *thought the desks were ruined,* but after drying them off, we found them to be in perfect condition. They look as good as new today and not a *single defect has shown* up in the entire lot."

SQUIRES INKWELLS

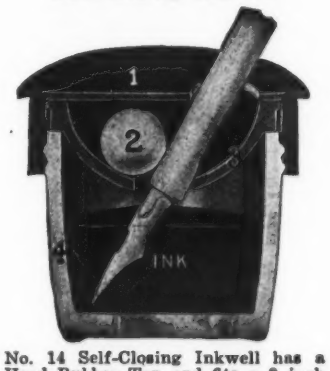
Squires No. 59
Boston Inkwell

We make the Boston Inkwell with three different styles of tops and three styles of glasses, all interchangeable. They fit a 1-27/32 inch hole.

Squires No. 12
Common Sense Inkwell

Our No. 12 or Common Sense Inkwell is made in three sizes, to fit holes 1½", 1¾" or 1⅞". Corks with Caps or Rubber Corks furnished as desired.

Squires No. 14
Self-Closing Inkwell



No. 14 Self-Closing Inkwell has a Hard Rubber Top and fits a 2 inch hole. It is the best inkwell on the market.

Squires No. 3 or
Chicago Inkwell

We furnish a one-lug or a three lug glass for this inkwell which fits a 1-27/32 inch hole. Nickel Plated.

Write for Catalogue, Prices and Samples.

SQUIRES INKWELL COMPANY
Brady Bldg., Third Ave. and Ross St., Pittsburgh, Pa.

"the official" waste-basket

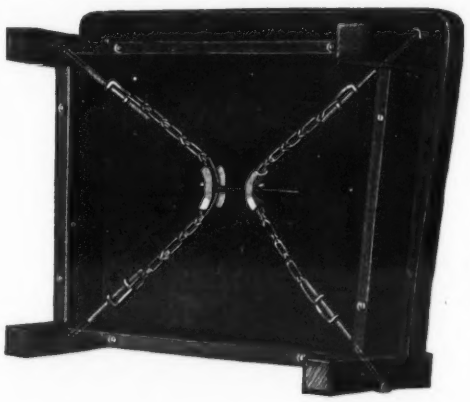
In seventy-eight per cent of the schools of America, Vul-Cot is standard equipment . . . Solid at sides and bottom, so that not even the smallest particles can sift through onto the floor . . . Made of National Vulcanized Fibre—a material that is practically indestructible . . . Guaranteed for five full years of service.

NATIONAL VULCANIZED FIBRE COMPANY
Wilmington, Del., U. S. A

VUL-COT
-the national wastebasket

Now . . . These famous School Chairs Have an added advantage!

You can secure Tell City Chairs equipped with the famous Wittliff braces, an added advantage that means reduced maintenance costs for your school board. We have contracted for **exclusive** use of the famous Witliff furniture brace for Tell City School Chairs.



Bottom view of chair, showing position of Witliff brace. Angle-headed bolts run through each leg, firmly bracing the entire chair. Angle-head bolts are flush with posts.

No. 1634

Tell City Tablet Arm-chair, No. 1634, is all quartered oak, full box saddle seat, quartered oak or maple tablet arm. Lower back slat is shaped, and this chair has been designed to give correct posture and comfort for the student.

Maintenance Costs Reduced

BECAUSE of the added advantage which the Witliff brace provides, these chairs will help reduce maintenance costs. Even after years of hard service there will be no need to send these chairs to the work shop for repairs. Merely a turn of the wrench, all wabble and squeak, due to climatic changes and hard usage, is gone.

Comfort is of Prime Importance

Tell City chairs are designed so that the student is seated comfortably, with back muscles relaxed, shoulders erect, and chest expanded. They actually reduce fatigue and stimulate application to studies.

The seats are made to conform to anatomical proportions. The back is properly slanted and made with wide cross members, giving correct spine support.

Tell City chairs are pleasant in appearance and fit in with the general surroundings. They are in use in schools, colleges, and universities everywhere. We manufacture a complete line of tablet arm, kindergarten, teachers', and office chairs.

Your inquiries are invited and do not obligate you in any way.

TELL CITY CHAIR CO.

TELL CITY, INDIANA

CRASH! BANG! SMASH!

Will your folding chairs stand this abuse? **Vikings** will. They have been designed for just such hard service and rough handling. **Viking** Steel Folding Chairs have a distinguished service record back of them. When you need folding chairs buy the *Sturdy-Rigid-Indestructible* **Vikings.**

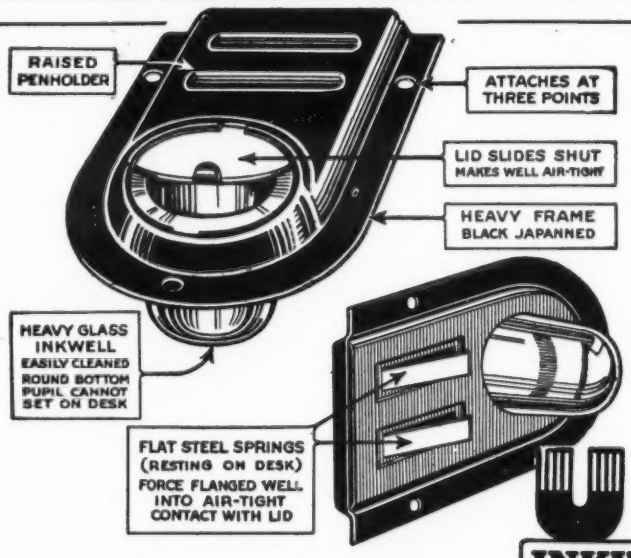
VIKING NO. 500

CONSIDER THESE **VIKING** FEATURES

STURDINESS
RIGIDITY
INDESTRUCTIBILITY
ECONOMY
COMFORT
ATTRACTIVENESS
COMPACTNESS
BALANCE
QUIETNESS
LOW PRICE

VIKING NO. 1000

MAPLE CITY STAMPING COMPANY
PEORIA, ILLINOIS



U S INKWELL

INKWELLS THAT LAST!

HUNDREDS more school boards every year are standardizing on U. S. Inkwells for replacements as well as standard equipment. They know from experience that this inkwell costs little, works well, and outlasts two or more ordinary inkwells.

The U. S. Inkwell is dustproof and noiseless. It does not tempt pupils to waste time.

U. S. Inkwells can pass your most rigid examination. Check the answers to these questions:

1. ***Is it easy to install?***
   Yes, just drive in three tacks.
2. ***Will it fit our desks?***
   Yes, it fits desks of any size. (Made in two sizes—Sr., Jr.)
3. ***Is it quiet?***
   Yes, the lid does not rattle nor creak.
4. ***Is it economical?***
   Yes, because of low purchase cost and unusually long life.
5. ***Has it any special advantages?***
   Yes, the tight-fitting lid keeps out dust and prevents evaporation. Pupils cannot tinker with it as easily as with the average desk well.

SEND FOR FREE SAMPLES TODAY

U. S. Inkwells are made and furnished with two size wells, one twice larger than the other. Write for samples of each so that you can see why it is much worth while to specify U. S. Inkwells—and determine which size best meets the needs of your school. You can get U. S. Inkwells from any school supply jobber or direct from our factory. Write today for prices and samples.

U. S. INKWELL COMPANY
404-20 S. W. 9th STREET DES MOINES, IOWA

NATIONAL
DUSTLESS
CRAYONS

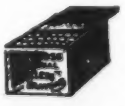
are truly
Crayons of Character

Free of grit from tip to tip NATIONAL CRAYONS respond perfectly to every stroke.

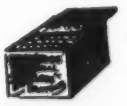
Being uniform in strength, every piece of NATIONAL CRAYON will withstand a firm grip of the fingers without danger of breaking or crumbling.

The dustless feature, combined with uniformity in all other respects, makes NATIONAL the ideal crayon for the classroom.

Your regular school supply dealer can serve you. If not, write direct.



THE NATIONAL CRAYON CO.
West Chester Pa.

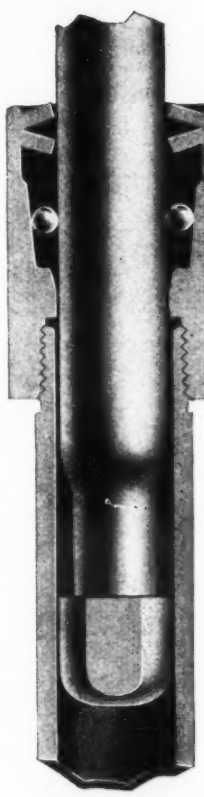


VITEK EVER-HOLD TRADE MARK REG. U.S. PAT. OFFICE

Special School Furniture

Plan from the VITEK Catalog when buying steel school furniture. VITEK engineers have developed new principles in construction of steel chairs and stools with revolutionary results. VITEK applies strength to simplicity and quality to economy—results made possible by the kind of engineering and manufacturing genius which never rests satisfied. For sheer worth VITEK furniture cannot be surpassed. Years from today it will still be like new.

We invite you to send for the VITEK Catalog. Study the variety of designs we offer. Plan the optional features that suit your needs best. If you do that you will realize how far VITEK leads its field.



Automatic Adjustable Steel Stools

Every laboratory, art department, mechanical drawing room, etc., should have adjustable stools. Students sitting too high or too low become fatigued and fail to get the best out of their work. Simply lift the seat of a VITEK stool and it remains at the desired height. Small steel balls lock each leg. Hard wood or steel, fixed or swivel seats. Optional floor contacts.

Brunswick Steel Chairs

An ideal chair for auditorium or lecture room. Can be set separately or attached in rows. Oak saddle seat. Note how stoutly this chair is built, yet how simple its design. That is the reason for VITEK economy. Its curves fit the form and insure comfort.

Light, Strong, Silent, Steel Folding Chairs

Flat-folding makes convenient storage. Light weight makes easy handling. We know of no other seat on the market that can compare with it for comfort, strength and economy. Silent rubber floor contacts can be replaced with ordinary crutch tips when worn.

Cafeteria Steel Chairs

Hard wood or steel seat. Silent glider floor contacts. All joints welded for strength. Built to your specifications. Three legs or four as you wish. May be ordered without back.

Send for the Catalog

Write at once for the VITEK Catalog giving complete details. These advanced designs are exactly what you want. Plan from the VITEK Catalog and you get extraordinary value.

VITEK MANUFACTURING CO.

Dept. 101 **Omaha, Nebr.**

STACKS FLAT FOR CONVENIENT STORAGE

No. 44 Swinging Slat Back

Many features developed throughout our years of experience as Folding Chair manufacturers have been incorporated in this model. It folds perfectly flat, is nontipping and will nobly stand up under severe use.

That is one of the main qualifications of the No. 44 Standard Folding Chair. As shown in the illustration to the left it folds perfectly flat. Thus quite a number of chairs can be stacked where previously there were only a few. The resultant economy of space makes it advisable to buy chairs that stack flat.

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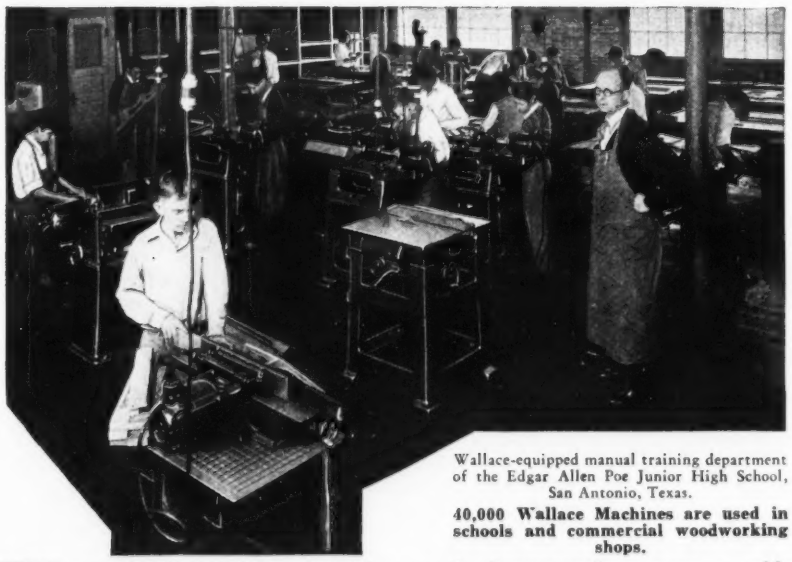

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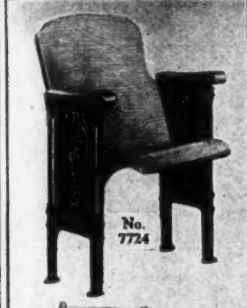

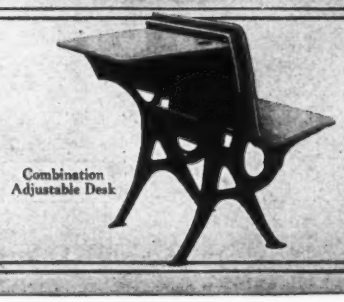

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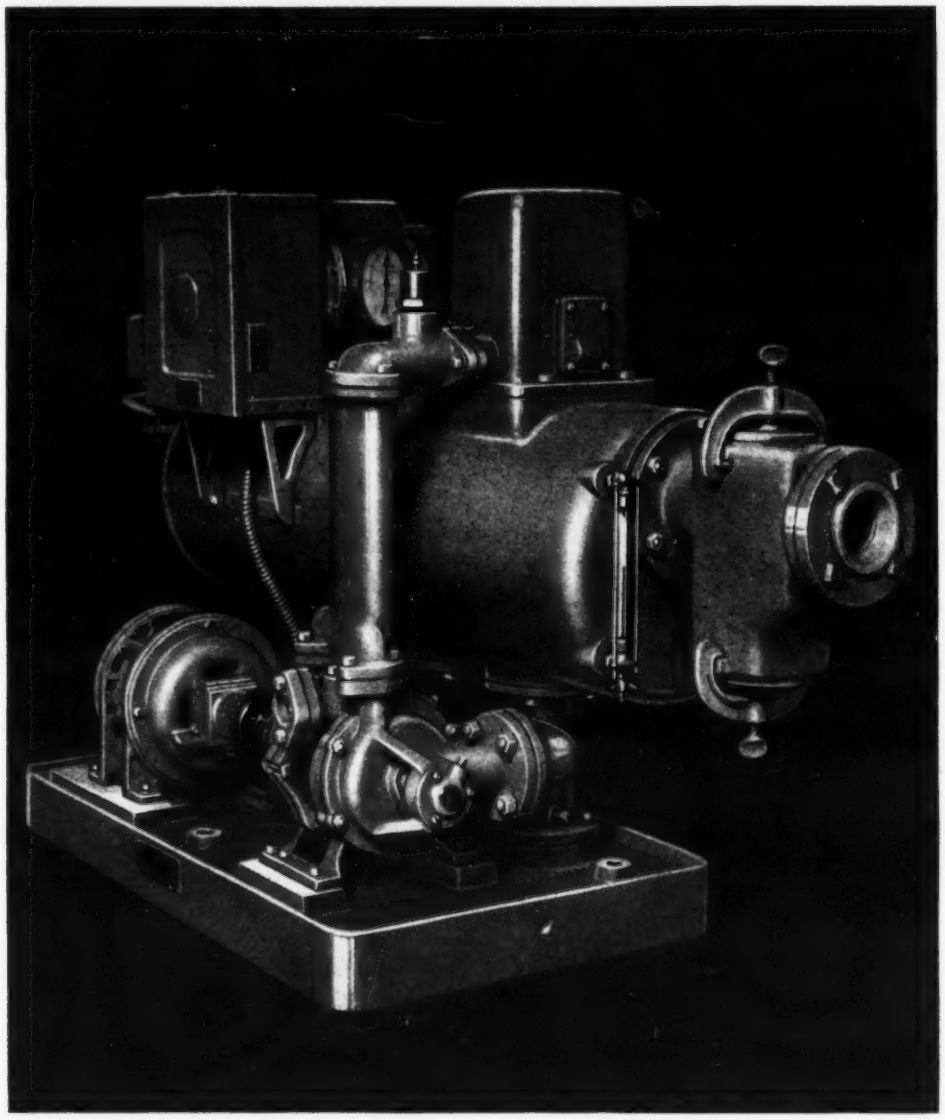

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No. 5

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The Shop-Early Idea in the School Field

There is something commercial in the "SHOP EARLY" slogan, and one associates the same with the retail merchant who desires to stimulate his holiday trade. And yet the slogan has a very definite application to the school trade, which is seasonal in that purchases are usually made before the reopening of the school year.

The time factor exerts itself and may result in unfavorable as well as favorable conditions. If the general public were to rush into the stores of their respective communities on one and the same day for their annual purchases, they would secure an unsatisfactory service. On the other hand, if the public came in some consecutive order, all would be served expeditiously and fairly as to trading conditions.

The manufacturers of school supplies and equipment aim to gage their production operations in order to meet the demands made upon them in an orderly fashion. Their output is heaviest when the demand is lowest. The supply reaches its peak in the months of June and July at a time when the demand is at ebb. The demand reaches its peak point in the months of August and September.

All would be well if the supply and demand factors adjusted themselves so as to attain the highest efficiency. But this is not the case. It is the common experience that the best selection of goods, the most careful attention to orders, and the promptest shipping service of school goods take place when the demand is at the lowest. It is also the experience that prices are lowest early in the spring of the year. Both service and prices become more unfavorable as the September opening of school approaches. When the peak of the buying season is on, manufacturers and dealers are so overwhelmed with business that they cannot meet the demands. The results are delayed delivery, depletion of stocks with consequent substitution, and higher prices.

School boards who have genuine concern for the prompt reopening of the school year, for economy in purchasing, and for efficiency in their school systems, buy as early as possible.

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The contents of this issue are listed in the *Education Index* and *Current Magazine Contents*.

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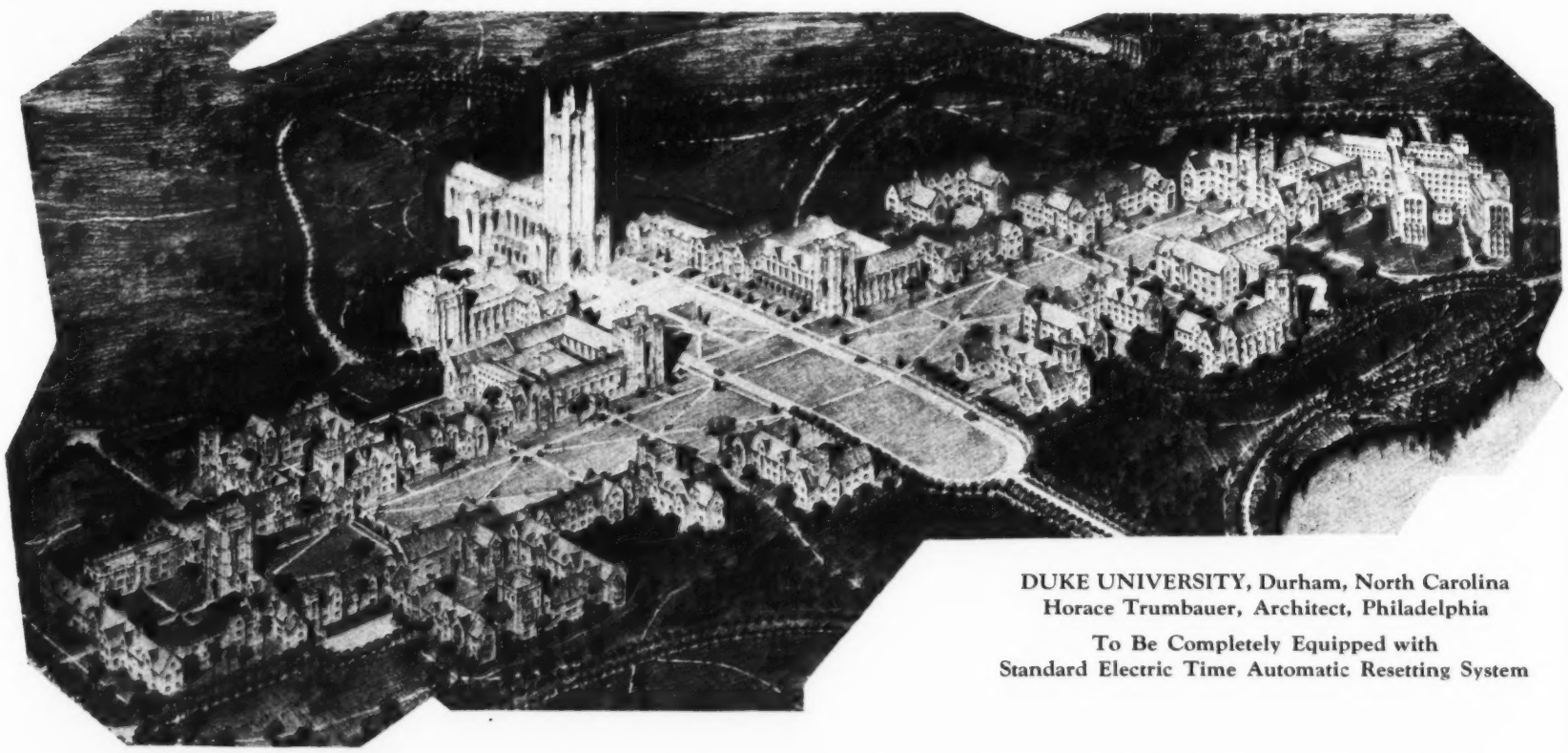

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THE AMERICAN
School Board Journal

Founded March, 1891, by WILLIAM GEORGE BRUCE

Volume 78, No. 5 | MAY, 1929 | Subscription, $3 the Year

A Fair Hearing — Please!

Small-Town Essays

Gathered from the Experience of Western and Eastern Schoolmen

ON GRADUATION

Mr. Lasater, the former superintendent of this district had come in on the noon train. He was met by all the students of the high school who did not have examinations to write, and was given a splendid ovation. All day our Miss Jones had worked with her committee on decorations to tidy up the local theater. By evening it was hung with colored crepe paper, with spangles and festoons. A carpet was put down on the stage. There was a speaker's stand, and to the right and the left of the half-moon-shaped row of chairs there were pedestals with vases and flowers.

People came from far and near. By eight o'clock the theater was packed. The seniors in gray caps and gowns marched with slow steps to the stage. The members of the junior class held flower arches over them as they passed forward. The orchestra played soft music. The crowd was hushed.

For two hours Mr. Lasater spoke. He recalled the twelve years he had spent among these people. He dwelt upon human character as an exponent of human happiness; on the satisfaction of work well done. An inspiring message.

Mr. Morgan, the chairman of the board, advanced to the front of the stage. He had, he confessed, forgotten his spectacles and might have difficulty in reading the names on the diplomas. Someone in the crowd offered a pair, but the offer was declined. For a few moments our chairman spoke. He compared the schools of today with the humble beginnings of an earlier day when he was a teacher. He drew from a memory of several decades and proposed some guideposts to mark the hardships and the accomplishments which lay ahead of the graduates.

While the orchestra was playing and the crowd had flocked to the stage to shake hands with the graduates, a woman touched me on the arm. "I'm Mrs. Blank," she said. "Wasn't it fine? I was so glad when I heard that Mr. Lasater was to come back for graduation. I always like to hear Mr. Morgan. There is so much truth to what he says, —if we'd only live up to it."

She turned to a little boy dressed in blue knickers whose hand was suspended in her own. "You'll have to study hard, Henry, and then you can graduate just like that," she said.

But on the way home with a neighbor, who shall be nameless in this story I got another version.

"Your ceremony of graduation is fine, Professor," this man told me. "It dramatizes your school. It visualizes what is essentially an invisible process. It is hard for anyone to see the results in a school system, and the graduates sitting there in front fill this need of visible output.

"But when that is all said, what is the effect upon your graduates? A high school education is only a good start toward an education. If these youngsters are to get anywhere in this world, they must continue to study. Yet for a week you have emphasized the delusion that the day of pencil and tablet and books is over."

ON PROGRESSIVE MEN

There used to be a man who worked in this region who was known to be a progressive figure. Some said that he should have been in a community of great wealth so that he could organize a sort of experimental school to try out his ideas. As it was, his district was poor. His innovations were sometimes too costly. He was constantly hampered by a lack of money. He was criticised for extravagance.

But the missionary spirit was too strong in him to be suppressed. His personality was winsome. He was able to pursue his course although he won the name of being a great fighter. This fighting of his, I believe, was quite incidental. He only waged a petty war in his district because of the missionary spirit noted above. But he got a reputation, and with it came the opportunity to another position in a district back east, immeasurably larger that his own.

Some of the school men of this state met him four years afterward. The report they brought was that he had lost his combativeness. His voice had become soft and he often referred to his earlier work with something like good natured tolerance, as though he had learned better. Those who met him told us that he had been fattened and tamed.

This cynicism was accepted. Yet I do not think it is true that our one-time friend had lost his missionary spirit or his liking for new things. He had only been put in a position to see affairs of a different size.

It is one thing to contemplate putting in a new set of books which may be a slight improvement over the old, if the change involves only a few dollars. But when a change calls for thousands the matter is viewed in a different light. Likewise one new member of the high-school staff is not a revolutionary improvement, but in a big system where a new department would entail the addition of a dozen members, the superintendent must hesitate before he recommends such a change of policy.

For this reason we shall never, perhaps, look to our larger units for the pioneering spirit which leads to untried paths. Such schools are more likely to wait until new methods are projected in the laboratory of a smaller unit and their value proved beyond possible doubt. The smaller and comparatively more wealthy districts must shoulder the burden of trial and error, and this service is one of the very few justifications for having districts which are at the same time small and wealthy.

Our friend had realized that he could never argue his board in the city out of a thousand dollars as easily as he could once get a hundred dollar appropriation from the school in the village he had left behind. He was, and still is, as much of a progressive as he is allowed to be. The pity is that he could not have been elected to a small but wealthy district which would allow his flair for experiment full sway. Under those conditions he would have become a veritable beacon light in the profession.

ON GOOD BUILDERS

There used to be a lonely country schoolhouse up the Kickapoo, which was built many years before I was born. At the time I saw it the front porch had rotted away, the roof leaked, pieces of plaster had come down, and severe storms had raised the building off the stone foundation. People marveled that the thing continued to stand. My father told me that he had built that schoolhouse as one of his first building ventures. At the time he told me this, workmen were patching up the place so it could be used another year.

I visited Wisconsin a few years ago, when my father died. The day after the funeral I walked with a cousin up past the site of the old schoolhouse. The thing was half demolished. The authorities of the district had found it too much out of date for further use. Carpenters with hammer and chintze bars were demolishing it for something better.

As the two of us approached, we heard one carpenter call to his fellow. He pointed out the design of the timbers which he had just uncovered. For a moment they talked together about workmanship which would mortise and brace a structure together with such care. The technical terms which they used have escaped me, but I gathered from their talk that they had discovered the hidden strength which had kept the building standing through the stresses of rain and wind and time.

I shall never forget that tribute. My hope is that some time, when I shall have accomplished my day, something which I do will give masters of my craft a reason to pause and speak of the faithful workmanship of my service.

ON HABIT

There was once a schoolmaster who grew discontented with the restrictions which society imposes upon his profession. He brooded upon this for a matter of months. To some of us who knew him best, he confided that he doubted whether any of it was worthwhile. He would rail at the hypocrisy of respectable people, as though respectability and hypocrisy were the same.

For a year this man withdrew from teaching. He took up a different calling in a distant city and we did not hear from him for many months. Then he got the place left vacant by the resignation of the superintendent at Valley Forks, and there he still is.

When I saw him last year he told me of his experiences. Unlike many teachers who withdrew from teaching he found that he had a natural aptitude for business. He prospered.

And for a year he broke every restriction that teaching had imposed upon him. He gathered nightly with some of the gay set down town. Cabarets from the Pier Station to the west end of Market Street got to know him well. His carryings-on can be left to the imagination. And then at the end of the year he threw down his profitable business and his nighthawking and got him another place in the teaching profession. He liked teaching better.

(Concluded on Page 147)

Procedures in the Preparation of the Pittsburgh Salary Schedule

Quincy Alvin W. Rohrbach, Professor of History and Principles of Education, University of Pittsburgh;
Assistant Research Director, Citizens' Committee on Teachers' Salaries, Pittsburgh, Pa.

I. The Need for an Investigation of Teachers' Salaries

The teachers' association of the public schools in the city, by means of funds raised through the voluntary contributions of its members, financed a study of the economic position of a teacher in Pittsburgh. The study was made by two university professors of economics, and at its completion was presented to the board of education. In addition to this study, a committee on salaries in the teachers' association collected data on salary schedules, but not actual salary payments, in other cities throughout the country. These data were likewise presented to the board of education. The situation which had arisen called for action on the part of the school authorities. But, any action which might be taken, had to be substantiated by reliable and exhaustive data in order that it could be justified if questioned by the taxpayer. The collection and analysis of the needed data by the superintendent could be questioned either by the teachers or the taxpayers on the grounds of bias of one type or another. Consequently, after a careful consideration of the issue, it was decided to invite a committee of citizens who were representative leaders of the commercial, industrial, and professional activities of the city to review the situation and to conduct such studies as might be necessary.

II. The Citizens' Committee

The personnel of the citizens' committee which was a lay body of 42 members was rather unique. In the group were six bank presidents, the editor of a newspaper, attorneys, certified public accounts, sixteen corporation presidents, a university chancellor, the president of an institute of technology, and other men and women of affairs. At its first meeting the committee selected an attorney, the president of the largest public utilities company in western Pennsylvania, as the chairman. The secretary to the committee was a successful journalist who has subsequently been appointed as the director of a foundation. An executive committee of seven members, with the chairman and the secretary as ex officio member, was formed for the prompt disposal of incidental matters. The general committee then selected a research director and assistant research director to formulate a policy of action, and to submit the budget which such a program would require. It was agreed that meetings of one hour's duration between four and five o'clock in the afternoon be held as frequently as was deemed necessary by the research directors and the executive committee. In practice the meetings of the general committee were held frequently during the first six months and at greater intervals of time as the study progressed.

III. The Program of the Research Staff

The research directors agreed that the Pittsburgh School Survey Commission should be invited to become the advisory committee. The commission personnel consisted of a former state commissioner of education, now the president of a corporation, the dean of a school of education, and the superintendent of a city comparable to Pittsburgh. In addition to the advisory committee it seemed expedient because of the nature of the problem to retain five consultants. The personnel of the consultants included a statistician, an actuary, a professor of education, the director of the research bureau of the National Education Association, and the manager of a tabulating machine company. The research directors accordingly recommended the foregoing personnel to the general committee for the survey staff to study the provisions of salary schedules, salary payments, and the relative merits of salary procedures in Pittsburgh and in eighteen other

cities of similar size in the United States. The proposed budgetary requirements indicated that the cost depended upon possible difficulties which might be encountered, but the limits fell within the range of twelve to fifteen thousand dollars. Both the staff recommendations and the budget were approved and the investigation was initiated.

IV. Bulletins for the Information of the General Committee

The citizens' committee being a lay committee desired accurate information about teachers' salaries to guide them in their thinking about the problems which would be considered. The research staff accordingly prepared and issued fifteen bulletins during the first six months of the study. The bulletins were printed in the printshop of one of the city's vocational schools and were sent to each member of the general committee for study. The following bulletins were issued:

1. The single salary schedule
2. The salary schedules of Pittsburgh and eighteen selected cities
3. Salary increments
4. The personnel of the Pittsburgh schools—sex, age, marital status, and dependency
5. The personnel of the Pittsburgh schools—certification
6. Training in relation to salaries paid
7. Services performed and salaries paid
8. The rewarding of superior teachers
9. The cost of living and teachers' salaries in Pittsburgh
10. Salary payments in Pittsburgh compared with eighteen other cities
11. Tenure
12. Living costs in eighteen cities
13. The teaching load
14. Public-school expenditures in Pittsburgh
15. Pittsburgh school revenues.

The data for the foregoing bulletins were collected directly by the research staff in the cities studied. Personal data about the Pittsburgh teachers were collected by a carefully prepared schedule of questions and were checked for validity in the records of the system. Ninety-eight per cent of the replies of the teachers were usable. This high percentage is explained by the confidence which the procedure in the investigation solicited. Fair dealings was the principle of efficiency which was kept in mind in the formulation of every procedure.

All data were mechanically tabulated and counted. The use of a large number of simple tables, charts, and graphs proved highly effective in conveying the basic facts and the principles involved to the general committee. All charts made were 18 in. by 24 in. This item was significant for two reasons—enabling their ready reduction for plate purposes and also being usable for conference purposes at the meeting of the general committee.

EDITOR'S NOTE: Without question the Pittsburgh teachers' salary schedule represents the most interesting, constructive bit of school administrative work of the year 1929. School boards in small as well as large cities will find in the schedule a salary program which can be defended from every standpoint. The accompanying papers, if read together, constitute both an explanation and an appraisal that will be found illuminating and helpful.

V. Principles for Schedule Construction Yielded by the Procedures Employed

Principle A. Rewards for Superior Service.

The committee was of the unanimous opinion that such salary schedules as were proposed should lay the basis for giving definite rewards to those teachers who are rendering superior service in the schools of our city. The committee was not unmindful of the difficulties that are in store when attempts are made to reward teachers on such a principle of salary payment. But, it was also fully aware that, even though occasional injustices may occur in the administration of a plan for rewarding superior teachers, they are of minor significance when contrasted with those very grave injustices that exist in the present schedules whereby glaring over-payments are made to inferior and mediocre teachers at the expense of teachers who are rendering conspicuously able and high-grade service throughout the school system.

With this recommendation of the citizens' committee there was agreement both on the part of the board of education and the teachers as indicated by these excerpts.

There can be no doubt in the mind of any thinking person that in the long run it would pay to reward teachers generously. This is particularly true of the teacher who makes her calling her life's work.

It is the unusual and exceptionally able teacher in this group who specially merits financial reward that she has never received, and never will receive, under the plan of annual increments in salary obtaining in Pittsburgh and throughout the country. If a workable plan could be devised to suitably recognize this type of teacher with a salary more nearly commensurate with her service to the community, it would be a distinct achievement in public-school administration.—*Remarks by the President of the Board of Education, November 6, 1926.*

It may be true that these salaries are not yet as high as they should be. They are certainly not equitable, and never will be, unless a system can be devised whereby the individual teacher is paid according to the type of service she renders.—*Remarks by the Chairman of the Finance Committee, Board of Education, November 6, 1926.*

We believe that the term *teacher merit* is to be defined as outstanding success in realizing the aims of education in terms of pupil achievement, and we believe that noncontributing abilities which lie outside of the field of teaching should not be recognized as teacher merit.

We recognize that teachers vary in efficiency, and that it is just and desirable that they should be rewarded in salary according to the service which they render.

"We believe that recognition of the merit principle in salary is necessary for the sound financing of any salary schedule which may be adopted."—*From the Report of the Merit Committee, Pittsburgh Teachers' Association.*

Principle B. Salaries should meet Living Costs.

Salary adjustments should be made so that as far as possible every teacher in the school system will receive a salary sufficient to afford a standard of living in keeping with the needs and the demands of the teaching profession. In the light of this principle, flat increases, totaling approximately a quarter of a million dollars additional per year, were recommended for the teachers on the elementary schedule. It is they who are the lowest paid teachers in the system. Their fiscal status presents the most unfavorable condition considered in terms of living costs, and their present salary schedule is the farthest out of line when compared with elementary teachers' salaries in other leading cities.

Principle C. Superior Personnel in Principalships.

The Committee was of the firm and deep conviction that in the proper operation of salary schedules lies the possibility of obtaining better and superior teaching in the public schools. To gain this high objective however, the schools must have forceful and intelligent leadership. In short, superior teaching is predicated upon superior leadership. The committee, therefore, placed great stress upon having strong outstanding principals. Thus, it recommended such salary changes for principals as will attract and hold the highest types of persons, with outstanding educational and teaching leadership.

Principle D. Taxation.

This principle deals with the problem of taxation.

The foregoing policies which the Committee felt were both sound and desirable have but one limitation; namely, the amount of additional tax burden that can be reasonably carried for the establishment of the foregoing principles. The committee appreciated the need for higher salaries for teachers, but it also recognized its definite responsibility to the taxpayers. These two issues were constantly before the committee in its work. It realized that the finest contribution that could be made to the citizens of Pittsburgh would be to provide an efficient teaching corps for the public schools. The dominant thought in its proceedings has been the hope that it might be possible to construct such salary schedules as would bring into the school system the best teaching ability obtainable.

On the other hand, the committee realized that the taxpayers must pay the bill for salary increases. The committee was aware that there is an increasing trend in educational costs in Pittsburgh, as well as elsewhere, and that besides the increases in salaries herein proposed, the committee fully realized that other increasing school expenditures will become necessary as time passes, due to the growth in school population and necessary extension of the system. Even at this time expenditures are in excess of funds obtainable from an 11½ mill tax-levy.

In attempting to be fair both to the teachers and to the taxpayers alike, the committee believed that, in the light of all the facts, salary increases reaching approximately 9 per cent annually in six years, and the necessary additional taxation that such increases would entail, (three-quarters of a million dollars, or three-fourths of a mill increase in taxes at present assessed valuation), constitute an equitable adjustment of the problem.

In distributing this amount the committee has attempted to allocate it among the different classes of teachers so that it will meet their needs fairly, and at the same time obtain for the city of Pittsburgh the best teaching force possible.

VI. The Application of the Principles to the Making of a Schedule

The personnel of the school system have been arranged in the past into seven groupings for salary payments. The committee decided that it was not within its province to change the existing classification. It held that the reclassification of teachers is an administrative function which obviously must remain with the superintendent of schools and his staff.

For each of the seven schedules the committee recommended a definite minimum and automatic maximum. Beyond each automatic maximum five levels of merits were established, on the basis of superior teaching and additional training, for which there are higher salary rewards. Each higher level is to be filled by selections from the next lower level. This establishes a continuous and progressive selection in the determination of those who are eligible for the higher classifications. Quantitatively considered the five levels above the automatic maximum will provide for 45 per cent of the teachers in each one of the seven groupings. This percentage is far in excess of the number of teachers now eligible, on the basis of the length of tenure in Pittsburgh, or in the other cities studied. It would be manifestly impossible within the scope of a single article to reiterate all the specific recommendations of the committee pertaining to each of the seven salary groupings.

Summary of Maximum Additional Costs

Item	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
Schedule A	$240,000.00	$348,000.00	$420,000.00	$463,200.00	$484,800.00	$492,000.00
Schedule B	50,750.00	61,250.00	68,450.00	72,050.00	73,250.00	73,250.00
Schedule C	45,900.00	76,500.00	94,860.00	104,040.00	107,000.00	107,100.00
Principals	29,500.00	39,925.00	51,187.50	51,187.50	51,187.50	51,187.50
Personnel Department	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00
Total	$401,150.00	$560,675.00	$669,497.50	$725,477.50	$751,337.50	$758,537.50

VII. Recommended Plan for the Administration of the Salary Schedules

The committee recommended the appointment of another associate superintendent of schools to be assigned by the superintendent of schools and to have charge of personnel. Furthermore he should be appointed by the board of education upon the recommendation of the superintendent. Naturally, he must be one who has a thoroughgoing knowledge of the teaching process and supervision; as well as one who has achieved an enviable record as a very superior educational administrator.

Some of the more important duties to be assigned by the superintendent of schools to the associate superintendent of schools in charge of personnel would no doubt be:

1. To develop an organization and the necessary technique for the purpose of determining where, and by whom superior service is being rendered, so that the provisions for rewarding conspicuously high-grade service as provided in the various schedules can become operative.

2. To use his organization in cooperation with other administrative departments, and with supervisors and principals, for the early development of superior teaching during the automatic increment years of the teacher's experience.

3. To make specific recommendations for the advancement of such personnel who are rendering superior service and who have met the necessary requirements, to the salary levels provided in the schedules.

4. To give direction to the training of teachers and principals in service who aspire to qualify for the superior-service-salary levels. Such direction necessarily must include both the nature of the training pursued, and the amount of such training as a teacher may be permitted to carry at any one time. This provision will properly tend to protect the health of the teacher and to prevent a lowering of the quality of classroom instruction.

5. To develop a program for the selection of new teachers brought into the school system. The personnel department should stimulate the enlistment of the finest of recruits to the teaching service.

6. To recommend to the superintendent of schools the transfer, demotion, or dismissal of personnel whose services are manifestly unsatisfactory.

7. To develop under the direction of the superintendent of schools a program in connection with the Frick Training School for the proper selection of high-school graduates for elementary teaching and to assume jointly with the Frick Training School and the Department of Curriculum Study the improvement of the curriculum of that institution. The committee further recommends that as soon as practicable the Frick Training School course be extended to four years.

8. To act as a clearing house for adjusting personnel complaints arising from the teaching and administrative forces.

9. To develop and operate a system of personnel records for the entire school system which will be cumulative and comprehensive.

10. To cooperate with the fiscal officers of the school system in order to make such adjustments in the organization of personnel as are necessary to meet budgetary requirements.

VIII. The Cost of the Recommended Schedules

The additional costs entailed by the recommendations of the committee are set forth in the following table and when all the proposals are fully operative can be met by a three-fourths' mill additional tax.

IX. Adoption and Legislation

The recommendations of the citizens' committee were adopted by the Pittsburgh teachers' association and by the board of education. The necessary legislation has passed the Pennsylvania legislature and the proposals will become operative January 1, 1930. At the last meeting of the board of education, Dr. Samuel E. Weber, Superintendent of Schools, Charleston, West Virginia, was appointed associate superintendent of schools in Pittsburgh, to assume charge of the department of personnel provided for in the recommendations.

The Pittsburgh Schedule: An Appraisal

Sturgis Brown Davis, Professor of Educational Administration, University of Pittsburgh

Elsewhere in this issue is given an account of the steps taken in the development of the new salary schedule for the teachers of the city of Pittsburgh, Pennsylvania. In its development there were considered the equities of four groups of persons who would be vitally affected by the schedule whatever it might be. These groups were: the taxpayers, the children, the teachers, and the executive force of the board of education.

How do the provisions of this schedule appear to a student of education who was in no way connected with the formulation of the schedule; who is not a resident within the school district; and who has no connection with the city schools except friendly professional relations with the teaching body and administrative force? Is the board of education to be commended for adopting the best schedule possible for the time being, or was the whole procedure one of expediency and compromise?

In general the board of education deserves the congratulations and hearty support of all friends of public education. The schedule itself is not so praiseworthy as is the method by which it was derived, and the criteria set up for its operation. It required patience, courage, and careful consideration of all concerned to bring forth this schedule. It was expensive also to gather the evidence needed for rational action. But no city known to the writer has ever put forth such a constructive program for paying teachers' salaries. The program is a challenge to other cities who continue to reward teachers on traditional lines which have been repeatedly questioned.

As will be indicated later, the writer is not in accord with the schedule and its provisions as a permanent feature. At best it is but a step in the right direction. With the evidence at hand the adopted schedule seemed to be the best way of meeting the insistent demand of the teachers for higher salaries. If the open attitude of mind continues as it did in the formulation of the schedule, it is the judgment of the writer that the present program for rewarding teachers will be rapidly and decidedly changed. In certain details the program is arbitrary and impossible of execution under the present scheme of education in Pittsburgh. The four groups of individuals considered by the board will be discussed separately in the light of fairness and present tendencies in education.

First, the Children

The first group to be considered is the children. For their welfare the schools are established and conducted. Teachers, executive officers, and taxpayers are not entitled to any consideration until schools are established and in action. Under our form of government children have inherent rights to the benefits of education. Teachers have no inherent rights to demand any position or any type of salary except after legal employment. The courts have repeatedly declared that boards of education may refuse to employ or re-employ any or all teachers without stating any reason whatsoever. This provision is made to protect the rights of children. Have they been benefited by this new salary schedule?

Yes, they have been benefited most of all. It is well. The higher salaries will attract and retain the superior teachers. The best teachers to be had are poor enough indeed in comparison with the potential powers of children. The children will benefit again because merit in teaching is the

very crux of the new salary schedule. In the future teachers will be admitted, retained, and advanced largely upon the basis of merit. The director of the personnel division will assist in formulating the curricula and conduct of the city teachers' training school. He will also guide teachers in service in the course which they take in summer schools and extension classes. The higher levels of salary are reserved for only those who have completed requirements for advanced degrees at accredited institutions of higher learning. The children of Pittsburgh are to have highly trained teachers. This process of schooling for teachers will work to the advantage of children in another way. Only the fittest will survive. Only those who retain the openmindedness of children and who sympathize with them in their mental struggles can ever hope to benefit by the new schedule.

The children are to benefit in a way probably not considered by the citizens' committee. A situation is set up which will compel drastic modifications of the present formalities of the schoolroom. The details of this idea will be treated under another heading. But children are bound to be recognized as individuals in a merit system of teaching. Our present plan of making classes the unit of instruction is untenable. It is but a mistaken economic makeshift.

Finally, the children are to be benefited by superior leadership under the designation of principals of buildings. Under the present schedule there is a definite incentive for a principal to remain in what are generally considered undesirable locations. No longer will seniority, disciplinary skill, and a fondness for attending to details be criteria for entering or retaining a principalship. Scholarship, professional training, and leadership will be the criteria for principalship. The salary possible for principalships compares favorably with that of the superintendent in small cities, or of professors in the larger institutions. The schedule provides for principals who have the vision to rise above petty details and can devote their energies to study and research through the activities of teachers. On the surface this feature of the schedule looks good. Presumably we shall have to move along this line in progressing, but as will be shown later this part of the schedule is only an expedient. However, it is in the interest of children, and we can afford to cope with any measure for their sake.

The Schedule and the Taxpayers

Is the taxpayer treated fairly in this new schedule? Ostensibly, yes. The number who may participate in the new schedule at the higher levels is so keyed that the tax rate will in all probability never become burdensome. If this provision were to be retained indefinitely, however, taxpayers would get here as elsewhere just what they pay for. Taxpayers want better schools; they are sending more pupils to schools annually; more is being asked of teachers in the instruction of exceptional children. This latter situation exacts more from teachers, hence better preparation from superior young people. Taxpayers are only fooling themselves by setting up hard and fast lines arbitrarily for the payment of expert services eagerly desired. It is true statistically that thus far only about 45 per cent of all teachers have availed themselves of the opportunities to advance to higher salary levels. It is also true that a salary schedule of indefinite scale might tend to bankrupt our present taxing resources. But, in setting the arbitrary limits which it did, the citizens' committee ignored the very type of psychology which it was supposed to utilize by a salary schedule. Such arbitrarily chosen limits violate our democratic conceptions. A better plan would have been to protect the taxpayer by setting higher objectives for teachers to reach. The effect would probably be the same in the long run for the taxpayers and would preserve our cherished ideal of equal opportunity for all. Setting a limit of three per cent as the maximum number who may ever participate in the highest level is to confess a fear that a large number might attain the standards of merit which the committee set. Supposing that a larger number of teachers than usual do attain the standards set up, have not taxpayers received all they asked for?

MR. S. E. WEBER
Associate Superintendent of Schools,
Pittsburgh, Pa.

Mr. S. E. Weber, formerly superintendent of schools at Charleston, W. Va., on April 4 was elected associate superintendent of schools at Pittsburgh, Pa., with a salary of $10,000 per annum. Mr. Weber enters upon his new work on June 1.

Mr. Weber is a graduate of the Lock Haven, Pa., Normal School, Lafayette College, and the University of Pennsylvania, and completed a summer course at Columbia University in 1919. His educational career began in the district schools of Pennsylvania. Later he became state inspector of high schools in Louisiana, professor of secondary education in the Louisiana University Summer Session, dean of the School of Liberal Arts, and professor of education and director of the summer session for teachers at the Pennsylvania State College. In 1914 he was elected superintendent of schools at Scranton, Pa., where he remained until 1922, when he became superintendent of schools at Charleston, W. Va.

Mr. Weber is the author of a number of publications on school subjects and is a frequent contributor to the educational periodicals of the day.

If the standards set up were of the right kind, they would be self-compensating. Superior education creates more wealth by increasing the values placed on both material and immaterial things. For example, the writer knows of a man who was employed at a meager salary to teach instrumental music in the public schools of a small city. Through classroom instruction he developed a desire in pupils to learn orchestral instruments. He then set up a music store and profited by the sales of instruments. In connection with the music store he started a music studio and profited further by private lessons given to advanced students. Later the board of education saw its own shortsightedness and financed the whole enterprise through public taxation at less per capita cost and enlarged opportunities to children. Ideas make wealth. Coal was used for roadmaking until its possibilities were known. Vocational education in Europe has meant national prosperity. It pays for itself; it creates tastes, and develops skill to satisfy the newly acquired desires. We need to take account of these observations and apply them to educating future generations as to the proper use of the leisure time. This leisure time is rapidly accumulating through the increased use of labor-saving machinery and new conveniences. Never before have we so needed greatly superior teachers of the cultured subjects. We have done well in our command of material things; we have much yet to do, however, in commanding ourselves. We tend to earn and then live as we spend. The older civilizations find their highest enjoyment in creative work.

No, the taxpayers of Pittsburgh are not treated fairly by the new schedule. It is only an expedient. We need to reckon with the future in educational provisions. Temporary measures only prolong the values which education seeks to derive.

Fairness to the Teachers?

Are the teachers treated fairly by the new schedule? In these ways they are. They are going to be saved from their own inertia; and saved from continuing in situations which have become archaic. They are being treated fairly in that a living wage is assured. They are likewise treated fairly by being offered incentives to improve their scholarship and professional outlook.

Salary schedules in the past have been the result of unconscious bargaining, tradition, and sentimental notions. Inevitably some teachers were thus underpaid, others overpaid. What else could be expected but annual turnover in the teaching body and a shifting about from within? We have set up certain standards of certification, experience, and academic degrees. We have believed that these qualifications had much to do with merit in teaching. As a matter of fact they are only the best working assumptions we could formulate. The Pittsburgh schedule retains these criteria. If they are used for entrants into the system, they probably have some value as barriers to keep out undesirables.

But, the schedule also provides for a merit system in teaching. This is the challenge in the new schedule. It is the fairest part to teachers of the whole scheme. Regardless of age or previous training, teachers now have an opportunity to show what merit they possess in bringing about desirable mental changes in children. This last point is the real purpose of the school. It is the critical point in judging the merit of a teacher. It is the criterion that is fair to children, taxpayers, teachers, and executive officers. The principle is sound. The execution of it, however, is absurdly unfair to teachers under our present system of mass education. It has been tried repeatedly without success. We can not now recognize merit when we see it because we do not know what to look for.

But the situation is not all hopeless. Never before in this history of education were we so well prepared to undertake such a difficult problem. We have become happily conscious of our situation. We can set up objectives in as detailed a manner as we like by concensus until better determined. We can find out by patient inquiry what is the mental condition of our pupils at the beginning; and then in fairness to teachers we can let them have absolute freedom in developing children from where they are, to where we think they should be. Teachers who succeed without inflicting injury as a by-product should then be amply rewarded.

All this is easy to say, but difficult to do. If there is to be fairness to teachers, however, some such program must be undertaken. Mass instruction with classes as units, hearing of recitations, textbooks as curricula, discipline as a criterion, emphasis upon voice, dress, and other externals, and traditional teaching techniques obstruct merit in teaching. The best part for teachers is that the merit system will force the educational procedure into one where merit is possible. Our present procedure for teachers grew up in a time when only the ablest pupils remained in school; when achievement in the classics was the chief aim; when the memoriter system was the essence of good teaching; when physical discipline made or unmade teachers; and when formal mental discipline was a real philosophy of education. We have built up a huge system under these conditions that clings on regardless of our assertions to the contrary. We fear to let go lest we lapse into confusion. We have only to look to the progressive schools scattered widely here and there to see the way out. There the individual pupil is the unit for reckoning. Pupils are the workers. Teachers do only what teachers can do, viz., set up situations favorable for pupils to help themselves: test their work, diagnose difficulties, and appraise final results. They are the mental physicians of their pupils. They are consulting officials instead of drivers or taskmasters.

The adjustment of teachers to a plan where merit can be recognized is their own problem. Teachers tend to be skeptical about any merit

(Continued on Page 147)

The Purpose of the Statement of Fixed Assets and Fixed Liabilities

P. E. Leavenworth, Professor of Economics and Accounting, Western State College, Gunnison, Colo.

The question is frequently raised, shall fixed assets and fixed liabilities be included in the balance sheet of public schools? The answer to this query rests upon the purpose to be served by the balance sheet.

The balance sheet is a statement of assets and liabilities which is intended to show the financial condition as of a certain date. The assets show what is owned, and the liabilities what is owed, and the difference is the net capital at the disposal of the management.

The net capital is composed of two parts: First, it is the current capital which is the difference between current assets and current liabilities; second, it is the fixed capital which is the difference between fixed assets and fixed liablities. The current capital is the capital available for current expenditures, and fixed capital is the capital available for fixed capital expenditures.

It has been said that fixed assets of public schools have only a social value and that the statement of fixed capital serves no particular purpose to the school management, because fixed capital expenditures are available out of the same sources as current capital, i. e., school revenues. It is further pointed out that, while the statement of fixed capital of a commercial concern shows the amount of money which may be raised by mortgages and bonds, public schools base their mortgaging and bonding ability on public revenues rather than fixed capital.

In answer to the first objection it must be said that it is incorrect to consider public school property as having *only* a social value. While school property does not usually sell as readily as other property, it always possesses a market value. It is frequently uneconomical to maintain schools in the business districts of growing cities, and a correct statement of the market value of school property in such neighborhoods should call attention to this fact.

It may be stated in answer to the second objection that the marketing and bonding ability of schools, while largely dependent on public revenues, is also limited by the outstanding debts of the district—its mortgages and bonds. Furthermore, there seems to be no reason why such indebtedness may not be based on the value of the property. In fact, there is a decided advantage in doing so. Such a procedure would emphasize the relation between the value and use of school assets.

The statement that "fixed capital expenditures are available out of school revenues" is due to a confusion of the term "expenditure" and "disbursement." It is true that disbursements are confined to revenues, but expenditures are based and limited by the wealth of the community. After all, the question is not whether public revenues will permit greater school expenditures, but whether public schools can use the wealth of the community more productively than the taxpayer.

The statement of fixed assets is necessary in order to show the relation between funds (Bond Retirement Fund, Teachers' Pension and Retirement Fund, etc.) and outstanding indebtedness in the form of Bonds Payable, Pension and Retirement Reserves, etc.

In some states it is possible to refund school bonds for periods of from twenty to forty years. In such cases the outstanding bonds are likely to far exceed the value of the property. Such a condition would be shown in a statement of fixed assets and fixed liabilities.

A list of fixed assets and fixed liabilities is desirable for other purposes than mere valuation. It may be desirable to compare the amount of fixed assets in the form of land, buildings, and equipment in one location with those in another, to note trends in additions, and to compare ratios of school property to total property valuation. A list of fixed liabilities is essential in determining fixed charges in the form of interest, retirement reserves, etc.

In conclusion, it should be remembered that the purpose of the financial statement is to serve as an aid in controlling financial operations. Although such control involves both expenditures and disbursements, the greatest financial problem of the school administration is the problem of controlling school costs. Without a statement of fixed assets and fixed liabilities it would be impossible to determine the cost of operation of the school plant. Such cost is the value of the property and services consumed and not the expenditures or disbursements of school revenue.

School Housekeeping

H. M. Taylor, Shenandoah, Iowa

Several magazines are devoted entirely to the subject of good housekeeping, and many other magazines and newspapers give considerable space to the discussion of this subject. High schools and colleges offer courses in housekeeping, and farm bureaus and extension departments of colleges bring short courses in the various phases of this subject to the very doors of housekeepers. Only recently, however, and now only in a few instances is there opportunity for instruction in "school housekeeping." Now school housekeeping is a very important, and much neglected branch of general housekeeping, but there are faint signs that it is slowly coming into its own.

Iowa has only recently elevated the lowly barber trade to the rank of a recognized occupation by licensing barbers and establishing standards of sanitation and proficiency in this business. This leads us to hope that sometime in the future the custodians and caretakers of our public-school buildings may be elevated to the rank of a skilled occupation by being required to qualify according to carefully worked out standards. The janitor, his work, and his character are important factors in our scheme of education, second only to the work and the character of the teacher.

Prompted by the line of thought suggested in this brief preamble, the writer conceived the idea of a short course of instruction for janitors. The idea was put into execution on August 15, 16, 17, 1928. The original thought was to employ experts to instruct our own janitors for two or three days. There was no effort at publicity, but news of the project spread to adjacent communities, and we began to get inquiries from outside from janitors and others who were interested. To these we extended invitations to join with us in this work. The result was that fourteen janitors representing nine different schools, churches, and business institutions, were in attendance and, we trust, received some benefit.

As stated above, the course extended over three days, and was conducted by specialists in two fields: Lindon J. Murphy, sanitary engineer, and Royal H. Holbrook, specialist in the field of heating and ventilation, both of the Extension Division of Iowa State College, Ames, Iowa. The work of these men was supplemented by talks by local plumbers and electricians, and by the janitors themselves. The course offered dealt with such subjects and problems as: types of floors; cleaning, preserving and maintaining floors; equipment and material best adapted to each type of floor; principles of ventilation and air circulation; theory of steam and hot-water heat; theory and operation of steam traps; hot-air heat; and care of lawns and shrubbery.

Judging from the expression of the men in attendance, all were well satisfied with the instruction received, and with the benefit derived from discussing their problems with each other. From the number of inquiries received ,and the interest manifested in this project, I am led to believe that there is a real need for instruction in the field of "school housekeeping."

F. H. BARBEE
Superintendent of Schools-Elect,
St. Joseph, Mo.
(See Page 90)

THE PAY-AS-YOU-GO PLAN IN WICHITA

In connection with the recent school election, the six members of the Wichita, Kans., school board sought a reelection to membership on the basis of the pay-as-you-go policy under which the board has conducted its business.

It appears that six years ago, the board found itself in a serious situation through the failure of the American State Bank and the loss of $400,000 in school funds. The board took stock of itself and decided to proceed on a more businesslike basis.

At the suggestion of Dr. Frank A. Neff, a new member of the board, a movement was started for a strict budget system and for the payment of improvements out of the budget instead of going deeper into debt. The school board itself owed $2,500,000 at that time. During this time the board has adhered to its established policy, and in the erection of the new high school the same plan was followed in spite of contrary agitation. In the past six years the board has not issued one single new bond, but has instead paid off nearly $1,000,000 of its debts, reducing the bonded indebtedness to about $1,500,000. It is now saving enough yearly to pay for a new school building, which has been possible through the retiring of two fifths of the bonded indebtedness of the schools. The budget provides for the retirement annually of all bonds coming due within the succeeding years, and in the period of six years, the board has built or added $2,225,000 worth of new buildings, grounds, or improvements. All have been paid out of the regular budget, and improvements now under construction will be paid for as the work is completed from funds already available.

All of this has been done without raising the taxes. In fact, the board has actually reduced the taxes during the last two years, from sixteen mills in 1926, to 15.9 mills in 1927, and 15.8 mills in 1928.

School Business Administration—II

A Salary Schedule Versus the Salary Budget for Public-School Janitorial-Engineering Service

Geo. F. Womrath, Assistant Superintendent in Charge of Business Affairs, Minneapolis, Minn.

A basic salary schedule for public-school janitor-engineers would be a rather easy thing to prepare, if the task could be approached with an open mind, entirely free from the restrictions and prejudices which are almost certain to inject themselves into the figuring when the shadow of the tax levy falls across the page. Basically, the compilation of a wage scale is purely a humanitarian question. However, in connection with public service it is frequently made a distorted economic question by associating it with the tax levy.

There exists such an intimate relationship between a number of factors which definitely affect the amount of money to be provided for a janitor-engineer payroll that a discussion of the salary schedule necessarily included a reference to these other factors, principal among which are:

1. Difference between salary or wage schedule and the salary budget.
2. Duties or work to be performed (extent of work).
3. Standards for performance of work (quality of work).
4. Time factors or time required to perform each operation.
5. Volume of work to be performed (quantity of work).
6. Man-power:
   a. Equivalent of one man-power.
   b. Total man-power required.
7. Work schedules to eliminate waste of time.
8. The wage schedule.
9. The total salary budget.

Salary Schedule Versus Salary Budget

It is of the utmost importance that the salary schedule be not confused with the salary budget. The salary schedule is the fixed sum paid each employee per hour, day, week, month, or year according to a predetermined scale of wages adopted by the board of education, the basic rate being paid regardless of the number of employees in the service. The salary budget is the total amount which must be provided for the year to pay all employees according to the adopted scale of wages, and is equivalent to the salary or wage scale multiplied by the number of employees, plus all additional sums for personal service that may have to be rendered.

It is of equal importance not to confuse the salary schedule with the work to be done, the establishment of standards of quality of work to be performed, and time and other factors entering into the service, although all of these are vitally associated with the salary budget and determine the annual cash budget to be provided.

Extent of Work

A list of the duties and activities of the employees in the janitorial-engineering service should be prepared as these determine the extent of the work to be done. If certain duties are scheduled and the man-power is provided to perform them, these will determine a certain payroll. If the duties are multiplied and the extent of the service doubled or tripled, the payroll should also be increased, as it is obvious that a school system which requires classroom floors, boiler tubes, and other parts of the building and equipment to be cleaned daily will require more men than a school system in which these operations are performed only once a week or less often.

Standards

The standards, or quality of work, are also directly related to the man-power and payroll, as the same deduction may be drawn in connection with quality of service as is drawn above in connection with quantity of service. In the final analysis it is not the mechanics of the work which produce satisfactory results, but the quality of service rendered, and this is, primarily, the exercise of the experience and initiative of the person in charge of the service. This introduces the human element,—a most difficult thing to cope with. If the person in charge is endowed with high ideals and a keen appreciation of cleanliness, orderliness, and neatness, and if to this is added the ability to impart these characteristics to others, this combination of qualifications will manifest itself in well-kept, clean, comfortable, and sanitary buildings, and will require more man-power than is needed for buildings in which little work is done and which are allowed to remain dirty and insanitary. To lend the dignity and authority to this position that befits its importance, the person in charge should have the title of supervisor or its equivalent, thereby clearly conveying the impression that "the policies, standards, methods, and devices of training janitors (and engineers) come under the direction of educational authority." (Henzlik).

It is sometimes held that the principal in each building should be given full charge of the janitorial-engineering service in his building. This is true of only those school systems which cannot afford a supervisor or which have no positive control over the service, systems which are operated on the "rooms system" basis, the "custodian system" basis, or the "contract system" basis. When the board of education adopts any of these systems, the compilation of a salary schedule is not necessary. The only requirement is that bids be advertised for on the janitorial-engineering work, and that the accepted bid be inserted in the annual budget as a contractural item. It is now well recognized that under any contractual system it is impossible to secure equality of service in the different buildings, or uniformity in the quality of service performed, as the control of the service is vested in a person not under the immediate direction of the board. The ideal organization of school-janitorial service requires that a supervisor have full charge and impart to the principals and teachers the duties and standards which will be demanded from the janitors and engineers, the principals then cooperating to these ends and exacting service in conformity therewith.

Handicaps imposed by the board of education itself often provide very serious obstacles to the establishment of high standards for janitorial-engineering service. As a general rule, boards of education are not at all concerned with school-housekeeping standards nor with the facilities (tools and materials) needed by the janitors and engineers to perform high-grade work. Board members only too often expect high-grade service without making any effort whatever to ascertain to what extent their policies are responsible for the low-grade service found in the school buildings; service which cannot ever be made first-class unless the board itself approves and insists upon setting up high standards and is willing to pay for the labor, materials, and tools necessary to attain and maintain these standards.[1]

This paper is the second of an important series to be presented in the JOURNAL by Mr. Womrath. The janitor's salary schedule here discussed is secondary in importance only when compared with the teachers' salary schedule. The suggested approach involves long experience in which public interest and social justice for the janitor have been conspicuously in the foreground.

—The Editor.

Time Factors

After the list of duties has been prepared and the standards established for each duty, namely, the thoroughness with which each duty should be performed, a careful record should be kept and verified from time to time of the minutes required to perform each duty. These time factors can be determined by experience only ,and should be based upon the performance of work by able-bodied, efficient workmen. Such men are readily distinguishable, especially when opportunity is given to make comparisons in a large group of men all doing the same kind of work. A study of these efficient men quickly discloses the volume of work which such men will perform in a given time under given conditions. A study of the time required by these men to perform each duty, while maintaining the degree of thoroughness established as standard, will yield a time factor in minutes for each duty and kind of work performed. The answer is then reached by a simple operation in multiplication, as the kinds of work multiplied by the factors of repetition, and this result multiplied by the minutes per operation, equals the total volume of work to be done and is expressed in minutes.

It is quite evident that the amount of work that may be demanded from each employee equals the volume of work which should be performed within the number of minutes worked during the year, or 132,960. This figure is established on the basis of 5½ days per week of 8 hours per day, or 44 hours per week for 52 weeks, less 9 legal holidays. No allowance is here made for absences from work for personal reasons, or for vacations and sick leave. The figure 132,960 therefore represents *one man-power,* or the amount of work in minutes to be delivered per year by every able-bodied, industrious workman in the service.

If absence from duty with pay is allowed, it will be necessary to figure what this lost time amounts to each year. This time should then be added to the total man-power in order to establish both the man-power and salary budget, as it is apparent that, if a certain man-power is carefully figured out for a school building, and then if several weeks of this labor are lost through absences, either the work in the building will suffer, or it will have to be performed by extra help. This extra help should be added to the payroll.

It is equally important that the man-power schedule shall not be confused with the wage schedule, as much so that the salary schedule and the salary budget shall not be confused. The man power and the wage schedule are absolutely independent of each other. "Man power" is a constant; "wages," or the wage schedule, is a variable. Man power, or the number of men employed, depends entirely upon the amount of work to be performed according to an established degree of precision. A floor may be slopped over in a minute and left dirty and unsatisfactory, or it may take five minutes or five times the man-power to properly mop the same floor in accordance with the degree of cleanliness which has been set up as the standard. The man-power, or number of men employed, has therefore, no connection with the wage scale, or the salary paid each man. The annual buget, or the total amount of money to be provided, is directly determined by the man-power, and equals the number of men employed multiplied by the wage scale.

[1]Standards for Public School Janitorial-Engineering Service by Englehardt-Reeves-Womrath. Published by Bureau of Publications, Teachers College, Columbia University, New York, N. Y.

BASIC ECONOMIC AND SOCIAL CONSIDERATIONS FOR FIXING JANITORS' SALARIES

The following schedules have been used for fixing the salary schedules for the City of Minneapolis. They should be read in connection with Graph 1 and the Work Schedules (page 47).

SCHEDULE I

Minimum Annual Cost to Provide Food, Shelter, and Clothing for a Family of Five, (Husband, Wife, and Three Children)

	Man and Wife	Man, wife and 1 child	Man, wife and 2 children	Man, wife and 3 children
Rent: @ $20.00 and $30.00 per month	$ 240.00	$ 240.00	$ 360.00	$ 360.00
Fuel: 3 and 4 tons anthracite, @ $18.00	54.00	54.00	72.00	72.00
3 and 4 tons soft coal, @ $9.00	27.00	27.00	36.00	36.00
Gas for gas stove, @ $1.50 per month	18.00	18.00	18.00	18.00
Light: @ $1.00 per month	12.00	12.00	12.00	12.00
Water: @ 50c per month	6.00	6.00	6.00	6.00
Food: (See details), @ 20c per meal and 1,095 meals per person	438.00	657.00	876.00	1,095.00
Clothing: (See details)—Schedules 3, 4, 5, 6, 7	187.55	236.35	279.75	311.00
Laundry	10.00	11.00	12.00	13.00
Furniture renewals, china, kitchen utensils, bedding, etc.	50.00	60.00	60.00	65.00
Brooms, mops, scrub brushes, soap, cleaning supplies, etc.	10.00	10.00	15.00	15.00
Incidentals X	10.00	10.00	12.00	12.00
Children's school expenses, music lessons, lectures, @ $25 per child		25.00	50.00	75.00
Doctor, dentist, medicines, etc.: maintenance of health	25.00	50.00	75.00	100.00
Car fare: 6 days man, 3 days each of others per week, until of school age, then 6 days, @ 7c per car fare	65.52	87.36	109.20	131.04
Stamps and Stationery	2.00	2.50	3.00	3.50
Daily paper, magazines, and reading matter	9.00	10.00	11.00	12.00
Insurance:				
Life $5,000 policy, @ $25 average premium for age	125.00	125.00	125.00	125.00
Accident	10.00	10.00	10.00	10.00
Fire, on household goods, $1,000	5.00	5.00	5.00	5.00
Contributions:				
Church, 5c per person, per week	5.20	7.80	10.40	13.00
Lodge dues, 50c per month	6.00	6.00	6.00	6.00
Union dues, $2.00 per month	24.00	24.00	24.00	24.00
TOTAL X	$1,339.27	$1,684.01	$2,187.35	$2,519.54
Recreation, vacation, 1 movie per week				
Taxes				
Savings toward a home				
Electrical appliances for home: iron, washer, vacuum cleaner				
Higher education of children Y				
Automobile				
Emergency expenses such as having a baby, serious protracted illness				
Theater and amusement				
TOTAL Y				
GRAND TOTAL	$1,339.27	$1,684.01	$2,187.35	$2,519.54
Per Month	$ 111.61	$ 140.33	$ 182.28	$ 209.96

SCHEDULE II

Food

Macaroni, Spaghetti, 1 lb. per week @ 10c	$	5.20
Meat, 1½ lb. per day @ 20c		109.50
Fish, 1 lb. per day @ 12½c		45.62
Butter, 2 lb. per week @ 58c		60.32
Lard, 2 lb. per week @ 32c		33.28
Flour, 15 lb. week @ 7c per lb.		54.60
Milk, 1½ qt. day @ 13c		71.17
Eggs, ½ doz. week @ 70c per doz		23.40
Cheese, ¾ lb. week @ 35c		13.65
Breakfast food, 1 pkg. week @ 12c		6.24
Beans,, 1½ lb. week @ 12c		9.36
Green vegetables, 50c week		26.00
Dried and canned vegetables, 75c week		39.00
Fresh fruits, 50c week		26.00
Dried and canned fruits, 75c week		39.00
Potatoes, 12 bu. @ $1.25		15.00
Cereals, ½ lb. day @ 10c		18.20
Sugar, 10 lb. per mo. @ 10c		12.00
Coffee, 1 lb. week @ 30c		15.60
Tea, 4 lb. year @ 50c		2.00
Salt, ½ lb. week @ 6c		1.56
Ice, 10c day for 6 mo.		18.00
Laundry soap, bluing, starch, lye cleanser, etc.		15.00
Spices, vinegar, pickles, 5c per week		2.60
Rice, ½ lb. per week @ 12½c		1.62
Baking powder and soda		2.50
Syrup, 10 lb. per mo., 8c per lb.		9.60
52 weeks x 7 days per week x 3 persons x 3 meals — 3276 or .206c per meal per person.	3276)	$676.02

SCHEDULE III

Clothing—Man

1 Overcoat	$	17.50
1 Cap		1.25
2 pairs shoes @ $5.00		10.00
1 suit clothes		20.00
12 collars @ 2 for 25c		1.50
4 ties		2.00
6 shirts @ 1.50		9.00
Underwear, 2 woolen @ $2.75		5.50
Underwear, 2 summer @ $1.50		3.00
12 pairs socks @ 25c		3.00
1 straw hat		2.00
1 soft hat @ $3.00 for 2 years		1.50
10 handkerchiefs @ 25c		2.50
1 pair gloves		1.00
1 pair overshoes and shoe repairing		2.50
2 nightshirts @ $1.50		3.00
2 suits work clothes		6.00
	$	91.25

SCHEDULE IV

Clothing—Wife

1 pair shoes	$	5.00
2 pairs house slippers @ $1.50		3.00
6 pairs stockings @ 25c		1.50
1 corset		1.50
2 suits underwear, winter @ $1.50		3.00
2 suits underwear, summer @ 65c		1.30
2 petticoats @ $1.00		2.00
2 hats @ $3.50		7.00
1 winter dress		15.00
1 pair gloves		1.00
2 summer dresses or suits @ $10.00		20.00
1 coat		17.50
2 waists @ $2.50		5.00
3 aprons @ $1.00		3.00
2 nightdresses @ $1.50 $		3.00
Sundries		3.50
Overshoes and shoe repairing		2.00
Belts and neckwear		2.00
	$	96.30

SCHEDULE V

Clothing—Boy (13-14 years)

Mittens	$	.50
4 pairs shoes @ $3.00		12.00
Suits and pants		14.50
Overalls and sweaters		4.00
4 shirts @ 75c		3.00
Ties		1.00
Underwear, 2 woolen @ $2.00		4.00
Underwear, 2 summer @ 50c		1.00
Caps		1.00
8 pairs stockings @ 25c		2.00
6 handkerchiefs @ 5c		.30
2 nightshirts or pajamas @ $1.50		3.00
Shoe repairing		2.50
	$	48.80

SCHEDULE VI

Clothing—Girl (8-9 years)

4 pairs shoes @ $3.00	$	12.00
1 dress		7.50
3 wash dresses @ $2.00		6.00
2 aprons @ 75c		1.50
Underwear, 2 woolen @ $2.00		4.00
Underwear, 2 cotton @ 50c		1.00
2 hats @ $2.00		4.00
Ribbons		.60
6 handkerchiefs @ 5c		.30
8 pairs stockings @ 25c		2.00
2 nightdresses @ $1.00		2.00
Shoe repairing		2.50
	$	43.40

SCHEDULE VII

Clothing—Girl (5-6 years)

1 dress, wool	$	4.00
3 wash dresses @ $1.25		3.75
4 pairs shoes @ $2.50		10.00
2 waists @ 35c		.70
Ties and ribbons		1.00
Caps		1.00
Underclothing		4.00
8 pairs stockings @ 25c		2.00
Shoe repairing		2.50
6 handkerchiefs @ 5c		.30
2 night dresses @ $1.00		2.00
	$	31.25

SCHEDULE II

Annual Salary	Rate per Month	Rate per Week	Rate per Hour
$ 960.00	$ 80.00	$ 18.46	$ .42
1,020.00	85.00	19.61	.445
1,080.00	90.00	20.77	.474
1,140.00	95.00	21.92	.50–
1,200.00	100.00	23.07	.525
1,260.00	105.00	24.21	.55
1,320.00	110.00	25.38	.577
1,380.00	115.00	26.54	.603
1,410.00	117.50	27.11	.615
1,440.00	120.00	27.70	.629
1,500.00	125.00	28.84	.655
1,800.00	150.00	34.61	.786
2,000.00	166.66	38.46	.874
2,400.00	200.00	46.15	1.049

SCHEDULE X

Minneapolis Trade Union Wage Scale per Hours		Wages per Day of 8 Hours	Wages per Week of 44 Hours	Wages per Year of 52 Weeks
$ .50	common labor	$ 4.00	$22.00	$1,144.00
.55	common labor	4.40	24.20	1,258.40
.62½	plumber helper steamfitter helper	5.00	27.50	1,430.00
.75	roofer	6.00	33.00	1,716.00
.80	roofer	6.40	35.20	1,830.40
.85	machinist	6.80	37.40	1,944.80
.90	glazier plasterer helper	7.20	39.60	2,059.20
1.00	carpenter electrician painter sheet metal worker	8.00	44.00	2,288.00
1.12½	gas fitter plumber steamfitter teamster	9.00	49.50	2,574.00
1.25		10.00	55.00	2,800.00
1.37½	brickmason	11.00	60.50	3,146.00
1.50	plasterer	12.00	66.00	3,432.00

SCHEDULE VIII

Basic Salary Schedule for Janitor-Engineers

	For 1928 First Year	For 1928 Second Year	For 1928 Third and subsequent years	For 1929 No increase for length of service
Charwoman	$ 80.00	$ 85.00	$ 90.00	$ 87.50
Cleaner, or janitor	100.00	105.00	110.00	117.50
Ass't Jan.-Eng.-in Charge (Grade Schools):				
2nd class license	110.00	115.00	120.00	
1st class license	115.00	120.00	125.00	127.50
Chief engineer	120.00	125.00	130.00	
Jan.-Eng.-in-Charge (High and Grade Schools) and Ass't Jan.-Eng.-in Charge (High Schools):				
2nd class license	125.00	132.50	140.00	
1st class license	130.00	137.50	145.00	147.50
Chief engineer	135.00	142.50	150.00	
Special janitors	100.00	.....	.....	
Firemen: 6 months non-firing period	110.00	.....	.....	117.50
6 months firing period	115.00	.....	.....	122.50
Utility janitor-engineer	.....	.....	160.00	160.00

Extra "A": (Applicable to 1928 schedule only)

1. Janitor-Engineers-in-Charge in high and grade schools and Ass't Janitor-Engineers-in-Charge of high schools will receive $7.50 extra per month after serving the Board one year; and an additional $7.50 extra per month after serving the Board two years.

2. All others (men and women) will receive $5.00 extra per month after serving the Board one year; and an additional $5.00 extra per month after serving the Board two years, with exception of special janitors and firemen, who will receive no increase in pay for length of service.

Extra "B": (Applicable to 1928 and 1929 schedules)

1. Every man who is required to return to his building for night social center work will receive $2.50 per night.

2. A Janitor-Engineer-in-Charge will be paid extra compensation at the rate of $4.00 per month for each employee in his building; the total per month to be based upon the total annual man-power divided by 12. (The Janitor-Engineer-in-Charge is not to be counted in computing this total.)

3. A Janitor-Engineer-in-Charge will be paid extra compensation at the rate of $5.00 per month for a second class license and $10.00 per month for a first class license effective only with the grade of license required by the building. That is, if the building does not require any license no extra compensation will be paid regardless of the license held by the Janitor-Engineer-in-Charge. If the building requires a second class license and the Janitor-Engineer-in-Charge holds a first class license he will be paid $5.00 per month. If the building requires a first class license and the Janitor-Engineer-in-Charge holds a second class license he will be paid only $5.00 per month, but if he holds a first class license he will be paid $10.00 per month. No extra salary will be paid for licenses held until the holder is promoted to either Janitor-Engineer-in-Charge or Ass't Janitor-Engineer-in-Charge.

Notes: (Applicable to 1928 and 1929 schedules)

1. All automatic increases for length of service to cease in 1929.

2. Men holding higher grade license than is required by the buildings in which they work will be paid on the basis of the required license only.

3. Men holding a lower grade license than is required by a building may be put in charge pending their examination for the grade of license required. These men will be paid on the basis of license they hold until they get the required grade of license. If they cannot secure the higher grade license within six months, they will be transferred and the positions offered to those who qualify.

4. Firemen do not receive any extra pay for length of service, for the reason that their positions are generally six-months jobs, but the board tries to find cleaning work for the best men to do during the other six months so as to give them steady employment.

Man Power

Having determined the total volume of work to be performed in each building and for all the buildings in the school system and the volume of work to be delivered per man, the total man-power required is found by dividing the total volume of work, expressed in minutes, by the volume of work per man, expressed in minutes. Fractions represent less than full time service, namely, months instead of years. Thus, if the total volume of work equals 2,659,200 minutes, the system will require 20 men (2,659,200 divided by 132,960) on full time, or every man figured on the payroll for 12 months. If the total volume of work equals 1,396,080, the system will require 10½ men, which means that 10 men should be employed for 12 months and 1 man for 6 months. If the volume of work equals 1,429,320, the system will require 10¾ men, which means that 10 men should be employed for 12 months and 1 man for 9 months. Allowance should be made for absences of the regular employees whose work is made up by extra men or by overtime.

When the relationship between these various factors and the salary budget is comprehended, the importance of having a fixed salary schedule asserts itself, as a number of extremely disconcerting things may happen if the annual budget is not computed scientifically by these factors.

First. If the annual budget is set at an amount lower than it should be and a fixed salary schedule maintained, fewer men should be employed who must then be overworked in order that the full volume of work shall be properly performed.

Second. If with the reduced man-power an attempt is made to perform all the duties within the regular working hours, there will be a lowering of the standards.

Third. If the work that is done with the reduced man-power and within the regular working hours is kept up to the established standards, other work must be slighted and the full volume of work will not be done.

Fourth. If the annual budget is lower than it should be and the proper number of men are employed to do the work properly, and within the regular working hours, and paid according to a fixed salary schedule, a deficit in the annual budget will be created.

Fifth. If the annual budget is lower than it should be and the proper number of men are employed to do the work properly within the regular working hours, then a cut in wages must be resorted to unless a deficit is to be created. This results in a break-down in the salary schedule. Lack of and underpaid workmen do not go hand in hand with the maintenance of high standards.

Sixth. If the annual budget is higher than it should be, the tendency will be to spend the excess by employing more men than are actually needed. This leads to a break-down in the morale of the entire organization.

The most unfair and unjust system of paying janitors and engineers is that which first arbitrarily sets aside a guess budget and then makes the wage scale vary in direct ratio to the number of men employed. Such a system is highly objectionable in principle and is extremely unjust to the employees. The right way to proceed is to determine first, the number of men needed to do the work properly, and then, multiply this number by a fair, living wage. This amount will be what should be provided by the school board through the tax levy in order that public-school property may be preserved and properly taken care of, and proper environment provided for school children and their teachers.

Work Schedules

Having determined the number of men or the man-power required to perform the janitorial-engineering service in a given school building, the next step is to prepare a separate work schedule for each workman in the building. These work schedules should definitely indicate the time when each duty should be performed. They are to the janitorial-engineering service what time tables are to a railroad system. The work is then done on time and, when every man has completed his day's work, the entire work schedule for the building will have been performed.[2]

The need for work schedules was made manifest by the study of the janitorial-engineering service conducted by a special committee of the National Association of Public-School Business Officials. The data gathered by this committee reveals a waste of 40 per cent of time, effort, and money in this service. (Graph 1.) The following extract is taken from the report of the committee as printed in the Proceedings of the Eighth Annual Meeting of the Association:

Forty per cent of the janitors' payroll of any school system, regardless of whether the system is one in which the board employs and controls all the employees or lets the work out under contract, is an item deserving careful scrutiny.

While it may be presumptuous to assume that a loss of 40 per cent of the janitors' payroll is applicable to most cities rather than being peculiar to the city in which the data were obtained, it nevertheless will be interesting to apply the following table to the janitors' payrolls of your respective school system:

[2]See appended sample work schedule (5 sheets) for a 5-man building.

40 per cent of a $5,000 per month payroll is $24,000 loss per year.

40 per cent of a $10,000 per month payroll is $48,000 loss per year.

40 per cent of a $25,000 per month payroll is $120,000 loss per year.

40 per cent of a $50,000 per month payroll is $240,000 loss per year.

Now suppose the loss is only one half the above figures. The waste for a period of twenty years would be:

$240,000 loss in 20 years on a $5,000 per month payroll.

$480,000 loss in 20 years on a $10,000 per month payroll.

$1,200,000 loss in 20 years on a $25,000 per month payroll.

$2,400,000 loss in 20 years on a $50,000 per month payroll.

Consistent effort during the past ten years to reduce the time wasted has resulted in a very substantial reduction in well-managed school systems. Some of the means employed to accomplish this reduction have been:

Janitor-engineer training schools. This has been the most important and most productive step taken.

Change from high to low pressure heating.

Preparation of work schedules so men are in buildings during the hours when they can work uninterruptedly.

Elimination of strictly "watchman" service at night.

(Continued on Page 148)

Bremer School May 4, 19—

WORK SCHEDULE FOR JANITOR-ENGINEER-IN-CHARGE

Hours: 7:00 A. M. — 4:00 P. M.

Inspect, turn on lights and water, fire, start up equipment, set clocks, adjust shades	7:00– 8:15
Firing, supervising, and inspecting temperatures	8:15– 9:00
Firing, loading coal, cleaning engine and boiler rooms, inspecting	9:00–10:00
Supervising	10:00–10:30
Sweep kindergarten and clean fires	10:30–11:00
Lunch	11:00–12:00
Firing, inspecting, supervising	12:00– 1:15
Firing, loading coal	1:15– 2:00
Inspecting, supervising	2:00– 2:30
Firing, cleaning engine and boiler rooms	2:30– 3:30
Locking doors, taking in flag, stop-school signs, and shutting down	3:30– 4:00

Saturday Schedule

Hours: 8:00 A. M. — 1:00 P. M.

Inspect, turn on lights and water, fire, start up equipment and instruct	8:00– 9:00
Firing, clean boiler and engine rooms, repair equipment	9:00–10:30
Inspect, wind clocks, read meters, make out reports	10:30–12:00
Clean glass	12:00– 1:00

Electric Switch—Room 302
Electric Meter —Room 302
Water Meter—In boiler room back of pumps.
All inside and inside of outside glass must be cleaned at least once every two weeks. May be cleaned at noon time, morning, or evening, or whenever other work can be eliminated.

Bremer School May 4, 19—

WORK SCHEDULE FOR ASSISTANT JANITOR-ENGINEER-IN-CHARGE

Hours: 2:00 P. M. — 11:00 P. M.

Sweep outside walk from Lowry and Emerson to 33rd and Emerson	2:00– 2:30
Pick up paper in basement, sweep Manual Training and tin shop, entrances inside and out on Fremont and Emerson sides, stairs from second to first floors	2:30– 3:30
Sweep 209, 207, 206, 211, 205, 213, 215, sweep second floor hall	3:30– 5:00
Locking up	5:00– 5:15
Lunch	5:15– 6:15
Firing, supervising night activities	6:15– 7:30
Clean boys' toilet on second floor and showers	7:30– 8:00
Take out ashes, load coal, supervise night activities, sweep gym., bale paper, bank fires	8:00–10:00
Inspect, shut off water, pull electric switch, see that all windows and doors are closed and locked	10:00–11:00

Saturday Schedule

Hours: 1:00 P. M. — 6:00 P. M.

Firing, scrub Fremont and Emerson entrances	1:00– 2:00
Clean boys' toilet on second floor and showers in basement	2:00– 3:00
Scrape tubes in boilers that are in use and clean out ashes in front of furnace, scrub boiler room floor	3:00– 5:00
Clean glass	5:00– 6:00

All inside and inside of outside glass must be cleaned at least once every two weeks. May be cleaned at noon time, morning, or evening, or whenever other work can be eliminated.

WORK SCHEDULE FOR JANITOR NO. 1

Hours: 7:00 A. M. — 4:00 P. M.

Unlock doors, sweep front outside walks, raise flag, place stop-school signs	7:00– 8:00
Turn water on all boys' toilet stalls, dust basement, supervise halls	8:00– 8:45
Distribute towels and errands	8:45– 9:00
Sweep all halls and stairways	9:00– 9:45
Supervise boys' toilet—second and third floors and halls	9:45–10:30
Clean finger marks on glass in basement	10:30–11:00
Lunch	11:00–12:00
Sweep second floor halls, sweep special class lunch room and supervise children	12:00– 1:10
Collect dirty towels and run basement halls. Sweep boys' toilet	1:10– 2:00
Supervise boys' toilet on second floor	2:00– 2:15
Clean boys' toilet basement, clean finger marks and glass	2:15– 3:00
Sweep 106, 109, 103, 102, 115	3:00– 4:00

All inside and inside of outside glass must be cleaned at least once every two weeks. May be cleaned at noon time, morning, or evening, or whenever other work can be eliminated.

Saturday Schedule

Hours: 6:00 P. M. — 11:00 P. M.

Pick up paper outside	6:00– 6:15
Scrub kitchen floor, clean woodwork	6:15– 7:15
Clean all desks and chairs in rooms 102, 103, 106, 109, lunch rooms and dust same, hall and stairs	7:15– 9:00
Clean boys' toilet in basement, 4 drinking fountains, 2 sinks in basement hall. Clean glass and finger marks from woodwork	9:00–10:30
Inspect inside and out, see that all doors and windows outside are closed and locked. Shut off water, pull light and power switches	10:30–11:00

Bremer School May 4, 19—

WORK SCHEDULE FOR JANITOR NO. 2

Hours: 12:00 P. M. — 9:00 P. M.

Take waste paper baskets from boiler room to third floor, sweep third floor hall, clean finger marks from woodwork in boys' toilet on third floor	12:00–12:45
Sweep kindergarten and supervise third floor hall	12:45– 1:15
Sweep outside walk from Lowry and Fremont to 33rd and Emerson, clean finger marks from woodwork on third floor	1:15– 2:15
Supervise third floor—boys' toilet and hall	2:15– 2:30
Sweep all stairways from third floor to second floor and see that Assembly room is in order	2:30– 3:15
Sweep 202, 203, 204, Kdgn., 302, 315, 303, 313, 304, 305	3:15– 5:15
Lunch	5:15– 6:15
Sweep office, nurse's room, 311, 306, 307, 309, 308	6:15– 7:30
Sweep third floor hall and empty dirt box	7:30– 7:45
Clean boys' toilet on third floor	7:45– 8:15
Sweep front outside walks and steps	8:15– 9:00

All inside and inside of outside glass must be cleaned at least once every two weeks. May be cleaned at noon time, morning, or evening, or whenever other work can be eliminated.

Saturday Schedule

Hours: 8:00 A. M. — 1:00 P. M.

Clean all desks and chairs in rooms 302, 303, 304, 305, 306, 307, 308, 309, 311, office, nurse's room, 313, 315, 316 and dust same rooms, hall, and stairs	8:00–10:00
Clean boys' toilet on third floor, clean finger marks from woodwork	10:00–11:30
Clean glass	11:30– 1:00

WORK SCHEDULE FOR JANITRESS

Hours: 7:00 A. M. — 4:00 P. M.

Dust class rooms on second floor, office, nurse's room, rest room, and stairways and second floor hall	7:00– 8:15
Distribute towels in girls' toilets, rest room, office, and supervise girls' toilets	8:15– 8:45
Clean drinking fountains, lavatories and finger marks, on front doors, clean brass on same	8:45– 9:50
Supervise girls' toilets on second and third floors	9:50–10:30
Clean finger marks on front stairways	10:30–11:00
Lunch	11:00–12:00
Sweep library, teachers' lunch and kitchen, supervise girls	12:00– 1:15
Clean girls' toilets on second and third floors	1:15– 2:00
Supervise girls' toilets	2:00– 2:30
Clean 8 drinking fountains, 8 lavatories and sweep girls' toilets on second and third floors and rest room	2:30– 3:30
Pick up paper on third and second floors	3:30– 4:00

All inside and inside of outside glass must be cleaned at least once every two weeks. May be cleaned at noon time, morning, or evening, or whenever other work can be eliminated.

Saturday Schedule

Hours: 8:00 A. M. — 12:00 M.

Clean all desks in rooms 201, 202, 203, 204, 206, 207, 209, 211, 213, 215	8:00– 9:30
Dust all these rooms and hall, also 206, and clean teachers' rest room	9:00–10:30
Clean glass	10:30–12:00

Teacher Rating From the Principal's Point of View

William A. Miller, Springfield, Ill.

Among the many healthful indications of an advancing teaching profession has been the growth in importance of the elementary-school principalship. This position is being recognized as one in which a splendid career may be found. It is a far cry from the days of the head teacher and administrator of corporal punishment to the modern conception of the work of the principal. Supervision has come to be one of the chief duties of the principal. No doubt there are still *office* principals, but those principals who are taking full advantage of their opportunities for service are putting in a goodly share of their time in constructive work for improving the quality of the educational product of their schools.

This most important work of the principal is the one for which it is the hardest to find time. It is something that does not require immediate attention and is likely to be pushed aside by some minor duty that seems to be more clamorous for attention. Often we principals become so enmeshed in petty problems of administration, many of which would solve themselves if we gave them time, that we lose sight of our responsibilities as supervisors. A very helpful device in this rush of work is the rating card. After it has been devised, it works somewhat of itself even if the principal is doing something else. It lends definiteness to the problem of supervision, and tends to make purposeful what often would be otherwise an aimless visit of the principal to a teacher and class.

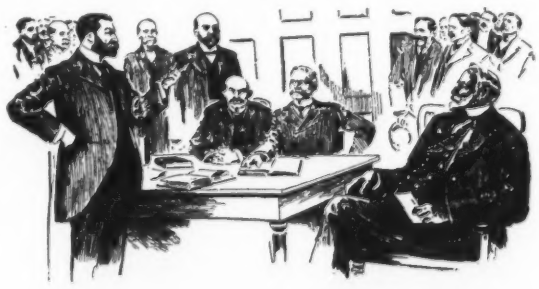
Many modern schools have a testing program that shows something of the quality of the educational product. In this respect the school is not so fortunate as the factory which can measure and test its product with much greater accuracy that we can ours. However that does not mean that we should not measure all we can. But because the value of much of our work is to be found in states of mind, attitudes, and habits of thinking and working, it cannot be accurately measured by any tests as yet devised. Consequently there has been a tendency to rate the teacher rather than his work, the doer not the deed. Although this practice is ridiculed by opponents of rating schemes, the situation is not as bad as it seems. Although the factory can measure its product, it fails to take into consideration the effect of the machine on the man who works with it day after day. There is no doubt but that we tend to become like those with whom we associate. Most of us teach the way we were taught rather than according to the principles and methods we have studied. If the teacher, then, has the right qualities and we judge him accurately on them, will we not have a rather reliable measure of his value to the school? No teacher of satisfactory attainments need fear a rating scheme of this kind. It is only as a supervisory device that any rating card can be justified. If used as such, it becomes a means of helping the boys and girls in the school to measure up to their finest and highest attainments. Anything that contributes to this end is justifiable, for the improvement of pupils is the purpose for which the school exists. If the principal helps his teachers to improve, he renders them and the pupils a real service. He can stimulate improvement by means of a rating card.

It was with this idea of helping the teacher to improve, that the accompanying schedule has been worked out. The list of points was first adopted without any definition of the value of each item. Later it was felt that, in order to get a more complete understanding, each point should be defined. A committee of supervisors, principals, and teachers are responsible for the outline as it now is.

A copy of the rating outlines used in any school system should be in every teacher's possession. It will let the teacher know the points upon which he is to be judged and will give the principal a basis for his judgment of the teacher. It will give definiteness to any discussion of the teacher's work.

It would seem that a rating scheme of this nature used with care and judgment, combined with the results of standarized tests administered to the pupils, ought to enable every principal to form a true picture of the teacher's value to the school.

1. *General Appearance.*
   Is the teacher
   —well groomed?
   —dressed appropriately?
   —neat and clean?
2. *Health.*
   Does the teacher have
   —sufficient energy to perform the work well?
   —prolonged or frequent absences due to chronic disorder?
   —any physical defect that interferes with school work?
3. *Voice.*
   Does the teacher speak with
   —good modulation?
   —clear enunciation?
   —proper expression?
   —too rapidly?
   —too slowly?
   —volume enough to be heard over the entire room?
4. *Resourcefulness and initiative.*
   Does the teacher have
   —ability to meet new and unusual conditions in regard to instruction?
   —ability in pupil guidance?
   —ability to solve the problems of the classroom?
5. *Enthusiasm and cheerfulness.*
   Does the teacher instill in the pupils
   —alertness?
   —optimism?
   —undue excitement?
6. *Tact.*
   Does the teacher
   —consider other people's feelings?
   —ask unnecessary questions?
   —give opinions too freely without being asked?
   —criticize others?
   —carry gossip?
   —have a conciliatory or antagonistic manner?
   —get along with co-workers?
   —manage difficult situations with parents or children?
7. *Industry.*
   Does the teacher
   —have materials ready when the class meets?
   —accomplish the day's task?
   —inspire the class with industry?
   —use supplementary material?
   —make the best possible use of the pupil's time?
8. *Promptness.*
   Are
   —lessons begun and finished on schedule time?
   —reports brought in punctually?
9. *Daily preparation.*
   Does the teacher
   —have equipment ready for the class exercise?
   —perform regular duties at the regular time?
   —inform himself as to the nature and environment of every child?
   —plan work well?
   —make pupil's tasks purposeful and significant?
   —relate pupil's tasks to their problems, desires, and experiences?
   —maintain standards for the grade or subject?
   —have a clear concept of the subject?
   —conduct lessons within the allotted time?
10. *Scholarship.*
    Does the teacher
    —have a thorough knowledge of the work being taught?
    —have sufficient knowledge of kindred fields of learning?
    —recognize the principles of method and psychology?
    —have the necessary educational background?
11. *Professional interest and growth.*
    Does the teacher strive for improvement through
    —extension courses?
    —summer study?
    —travel?
    —research?
    —attendance at professional meetings and conferences?
    —reading of professional literature?
    —general alertness in subject matter?
12. *Interest in individual pupils.*
    Does the teacher
    —know something of the pupil's home conditions?
    —have a knowledge of the pupil's chief interest?
    —give sound advice in vocational interest?
    —realize possibilities for further education of pupils?
    —maintain adequate standards of classroom work?
    —know reason for inferior work if such exists?
13. *Interest in school as a whole.*
    Is the teacher interested in
    —the work of other teachers and departments?
    —maintaining proper standards in the entire school?
    —parent-teacher meetings and activities?
14. *Co-operation and loyalty.*
    Does the teacher
    —maintain the proper attitude towards co-workers and those in charge?
    —refrain from discussing school matters with outsiders?
15. *Condition of the room.*
    Does the teacher
    —give the proper care to apparatus and material used?
    —give the proper attention to heat, light, ventilation?
16. *Discipline.*
    Does the teacher
    —keep the room orderly?
    —keep the pupils busy?
    —control through fear or some higher motive?
    —raise her voice to get obedience?
    —have difficulty controlling outside the classroom?
    —prevent trouble rather than cure it?
    —use proper forms of punishment?
    —handle own discipline?
    —control self?
    —use routine to an advantage?
17. *Attentiveness and interest of class.*
    Does the teacher
    —have the attention of the class?
    —have to resort to forced attention?
    —get attention through subject matter or presentation?
    —make stimulating assignments?
    —keep the pupils happy in their work?
18. *Ability to meet and interest patrons.*
    Does the teacher
    —discuss the child's welfare courteously and frankly?
    —try to interest patrons in classroom activities?
19. *Interest in playground activities.*
    Does the teacher
    —accept extra curricular assignments in good spirit?
    —do playground duty willingly and correctly?
20. *Moral influence.*
    Does the teacher
    —conduct himself in a discreet manner?
    —set a good example before the children?
    —are the teacher's actions questioned?



The Courts and Pupil Transportation

Neal Duncan, Superintendent of Schools, Richmond, Ill.

The first question[1] most frequently raised by those unfamiliar with pupil transportation is in regard to its legality. This attitude of mind has resulted in numerous lawsuits and has caused many litigants to carry cases to the state supreme courts. When one considers that all other questions of pupil transportation, to a greater or lesser degree, hinge on this aspect of the transportation it should be regarded as natural that such cases constitute approximately one-third of the total litigation.

Are the various statutory measures establishing the transportation of pupils to and from the common schools at public expense constitutional? Again, if such statutes are constitutional, is transportation compulsory in the states where such measures have become law? Are the statutory provisions to be regarded, in all cases, as mandatory? May transportation be limited within the state to certain types of districts and not extended to all? Is transportation a local, district matter or is it not? What are the implied powers of a school district, if any, to effect transportation? These questions are vital to intelligent discussion of pupil conveyance and will be here considered.

Is Transportation Constitutional?

There is much disagreement and confusion among the supreme-court decisions as to the constitutionality of state laws concerning transportation. The major part of this disagreement develops around some one or other phase of the transportation provisions rather than about the broad principles of transportation itself. Practically all the courts are unanimous in declaring that it is constitutional, though differing on some of the minor provisions; they have differed in their interpretation of the types of districts, grades, or distances to which the principle is applicable, but not on the principle itself. In a great many states, the interpretation of transportation legislation is made both wide and liberal; and in general, there seems to be a tendency to regard transportation as a means of equalizing educational opportunities, one which is real and to be used with judgment to provide uniform educational advantage to all. In many cases it has been specifically held that the transportation of pupils to and from school at public expense is legal. But there are only four cases[1] where the constitutionality of transportation has been directly passed upon by the courts, and out of these four, only one has held the state statute to be unconstitutional, and this on rather narrow and limited grounds.

Transportation has been specifically held constitutional by one state, and the others have held that in the absence of a statute specifically authorized transportation such transportation was unconstitutional, but added that it would not be unconstitutional in the presence of a statute definitely and specifically providing for transportation. In a Mississippi case, the supreme court held that a law which authorized the trustees of a consolidated district to provide transportation to pupils living more than two miles from school, the expense to be borne out of the county school fund, was not valid. As its reason, the court took the stand that such a provision authorized the diversion of school funds for a purpose not authorized by the constitution, since school funds are to be used to maintain the the schools. And, said the court, transportation of pupils is an item of expense of conducting the

Editor's Note: This paper is the second of a series of five to appear within the next twelve months in the JOURNAL. Subsequent papers will take up special phases of the problem of school transportation as defined by the Courts. The papers will constitute a most useful guide to school boards in establishing transportation, in fixing the contractual relations with drivers, and in managing minor problems arising from transportation of children to and from school.—The Editor.

schools.[2] This was apparently putting a very narrow and restricted interpretation on a statute intended to have a broader application for the benefit of the school children in the district.

In Illinois and Kentucky, the legislative intention to use school money for the transportation of pupils must be clearly expressed, as the courts[3] do not infer that such intent is carried by ambiguous expressions. The Illinois court is the only one to clearly hold that transportation is unconstitutional unless specifically stated by law. In view of this fact, the expression of the court's decision is well worth quoting: ". . . . . In the absence of any statute expressly providing that school money may be used for the transporation of pupils, the school directors of a district have no right or authority to use school funds for hauling children living remote from the schoolhouse to and from school, under a statute providing that it shall be their duty to establish and keep in operation . . . . a sufficient number of schools for the accommodation of the children of the district . . . and to secure for all such children the right and opportunity to an equal education in such free schools, and authorizing them to levy a tax for the purpose of repairing and improving schoolhouses and procuring furniture, fuel, libraries, and apparatus, and for all other necessary incidental expenses. To secure the right and opportunity of equal education does not require that children should be hauled to school any more than it requires that the directors should clothe them and furnish them meals. The acts of the directors in hiring wagons and making contracts were beyond their powers and illegal and void."

The state supreme court of Indiana partially disagrees with one of the last premises of the Illinois Court, for in one case[4] at least, it has held that the action of the school board in furnishing clothes to poor students was necessary in order to afford the opportunity of an equal education, holding that poor students, in not being able to clothe themselves decently, were not being afforded the same opportunity for education as the children of well-to-do families. This perhaps represents the other extreme in legislation, with the weight of the best law opinion holding more to the middle ground. It is interesting also to note that since this opinion was rendered, the Illinois statutes[5] have been amended to provide "that the board of school directors shall be clothed with power to provide free transportation of pupils, and where in the judgment of such board of directors the interests of the district and of the pupils therein will be best subserved by so doing, such board of directors may permit the pupils in such district or in any particular grade to attend school in another district and such board of directors may provide free transportation for such pupils . . ." In other states, it has also been expressly provided by statute that school authorities may transport pupils to and from school at the public expense, and under such statutes the right of the authorities to use school funds, to the extent specified, for the transportation of pupils, has seldom been questioned.

A Kansas case[6] well illustrates the point mentioned above. Here the supreme court held that a statute providing for an allowance to the parents or guardians of pupils, residing more than three miles from the schoolhouse, of a limited compensation for conveying their children to school, to be paid out of the public funds, is not unconstitutional on the ground that it diverts money raised by taxation to private and individual uses. The same principle is generally upheld in other states, on the ground that the common schools of the county are not maintained solely to confer advantages on those to whom instruction is imparted, but in the interest of all classes and conditions of people, and school funds, raised by taxation, may be used to pay the cost of transporting children to such schools.

Therefore, one may definitely conclude that the transportation of pupils to and from school at public expense is constitutional in the presence of a statute which authorizes it, but that transportation provided only under authority of the general powers granted to a board of education by the state stands more than an even chance of being declared unconstitutional, according to the precedents set up by the American courts. The assumption of powers by a body to whom they are not specifically delegated is productive of confusion; once begun there is no limit to which it might be carried. School boards in providing for transportation should carefully comply with the statutory provisions of the state under which they exist, else they may find that their actions will not stand the scrutiny of the courts.

Is Transportation Compulsory?

No statutes have been found which require that transportation be furnished in all districts throughout a state, nor have any decisions been found which so interpret any of the transportation laws in this manner. Transportation acts seem rather to have been justly designed to affect the children in a certain types of districts, rather than for the state as a whole. However, in several cases, we find that within a certain type of district within the state transportation is compulsory in all such districts.

In Oklahoma[7] the board of education in certain types of district is bound to transport children living farther a certain distance from the nearest schoolhouse, and such transportation must be furnished to all children entitled to it. In case of refusal mandamus will lie to compel the board of directors to furnish such transportation. In Iowa the opposite is true for there[8] the courts decided that mandamus would not lie to compel the directors of a district township to furnish transportation and the remedy was an appeal to the county superintendent of schools. In Indiana it has been held[9] that where the statutes impose on a township trustee the duty to make some provision for the transportation of children, though he may use his discretion as to the means employed, and he fails to make such provision, he may be sued on his bond by the parent who need not first appeal to the county superintendent of schools; in a Wisconsin case[10]

[1]Shaeffer v. Gilbert, (1890), 20 Atl. 434, 73 Md. 66. Opinion of the Justices, (1843), 5 Metcalf (Mass.) 587.
Reward, 29 Abbot (N.C.) 187.
Sander et al v. Getchell, et al (1884), 49 Am. Rep. 606, 75 Me. 158.
Pedigo v. Grimes, (1877), 13 N.E. 700, 113 Ind. 148.
Warren v. Board of Registration, (1888), 40 N.W. 553, 72 Mich. 398, 2 L.R.A. 203.

[2]Bufkin Chancery v. Mitchell, (1913) 23 So. 458, 106 Miss. 253.

[3]Mills et al v. School Directors of Community District 532, (1910), 154 Ill. App. 119.
S. A. Shanklin v. E. T. Boyd et al, (1912), 142 S.W. 1041, 146 Ky. 460.

[4]Shelby Council et al v. State ex rel. School City of Shelbyville, (1900), 57 N. E. 712, 155 Ind. 216.

[5]Laws of Illinois 1927. School Code par. 115, June 29, 1927.

[6]School District No. 3, Atchinson County, et al v. Atzenweiler, (1903), 73 Pac. 927, 67 Kan. 609.

[7]Wellston Cons. School District No. 1, Lincoln County v. Matthews et al, (1924), 230 Pac. 739, 104 Okla. 185.

[8]Queeny v. Higgins et al, (1907, 114 N.W. 61, 136 Iowa 573.

[9]State ex rel Stockton v. Lane et al, (1916), 111 N. E. 616, 184 Ind. 523.

[10]Schaut v. Joint School District No. 6, Towns of Lena and Little River, (1926), 210 N.W. 270, 191 Wis. 104.

the same has been held to be true. In Indiana,[11] furthermore, the trustee is required to furnish transportation to and from school to pupils living in an abandoned district, even though the trustee has never officially notified them of their transfer to a particular school. And in Ohio[12] the supreme court has held that in certain types of districts transportation must be furnished to all children living over a certain distance from the school, as in the Oklahoma case previously cited. In the same state, it has also been held [13] that the board of education must furnish high-school facilities or make them available by transportation, or board and lodging must be furnished to all the pupils of the district. In case of failure to provide such transportation, the board may, by mandamus, be compelled to choose one of the several alternatives though mandamus will not control their discretion but only cause them to exercise it.

In the light of these decisions, it would seem that transportation is compulsory only when certain districts are designated by law as being required to furnish transportation to their children. If no special provision is so made, the school board may use its own discretion. Evidently this is done to prevent any inequalities in the educational opportunity afforded the children of the state. Local school boards are much more likely to adjust such differences when unhampered by a rigid state-wide law in whose application no discretion is allowable. But in the certain types of districts, when transportation is required to be furnished by statute, no discretion can be used; the transportation must be provided and if it is not the parent may appeal directly to the courts.

Is All Legislation Mandatory?

In several cases it has been held that permissive legislation may become mandatory on certain conditions or in the presence of certain circumstances. But permissive legislation is not always mandatory; it varies with the statutes and the legislative interpretation of the court which reviews the case. In a Michigan case[14] it was held that the statute giving a district power to consolidate schools and to transport children living beyond a given distance from the schoolhouse of the district was permissive as a whole; yet, if the district exercised its power and did discontinue the school, then the duty to furnish tuition and transportation became mandatory. Permissive legislation may also become mandatory on a board of education when the voters of a district express their wish by vote.[15] The Kentucky state supreme court has ruled[16] that, where the law gives the board of education power to provide transportation, it is not mandatory upon the board of education to provide transportation out of the county funds in a consolidated district which has not levied a tax for that purpose. Going still a step further the South Dakota court[17] holds it mandatory that the board of education furnish room and board for children living too far from the school to be transported daily.

But in other cases permissive legislation has not been held to be mandatory. In one case[18] where the statutes provided that the board of education might make such rules and contracts for transporting children to and from school as it saw fit, the board of education made none. This was held not to be a failure to provide suitable facilities and accommodations for the children residing in the district since the matter was left to the discretion of the board. In Vermont[19] similar reasoning led to the decision that, where the statute provided that the directors might use part of the school money for transportation of pupils, it rested with the discretion of the school board as to whether it should be used, and that the act was permissive in character so that mandamus would not lie to compel the directors to so use the money. On the other hand, the supreme court of New York[20] has held that permissive legislation regarding transportation may become mandatory in certain districts by order of the commissioner of education of the state.

In general one may say that permissive legislation becomes mandatory only in those instances where the voters express their wishes by vote, where powers given to boards of education are indivisible and conditional—one depending for its effect upon the other,—or where conditioned by the order of some high state education official. In those cases where the matter is left to the judgment of the school board, it cannot be controlled by any action of the courts when it has actually used its discretion in consideration of the question.

Transportation Limited to Certain Types of Districts

In some states the decisions of the courts hold that transportation as mentioned in the statutes is limited only to certain types of districts. In Kansas[21] the courts hold that transportation is legal and applies only to pupils below the high-school level and that boards of education are not authorized to pay the expense of such transportation; and that an injunction may be issued against using school money for these purposes. The same has been held in Iowa[22] where it was decided that a parent could recover for transporting his children to the grade school, but not for those he transported to high school. In Texas the opposite has been held,[23] that transportation as mentioned in the statutes does not apply to the common schools, the court specifically using the term "common schools" in this instance to apply to the grades below the high schools. In Arkansas[24] the transportation statutes have been decided to apply only to those districts which receive state funds. Those operating on local funds are not permitted to transport children to and from school. The Georgia courts have made practically the same decision in a recent case.[25]

There seems to be some weight of legal opinion tending of recent years to limit transportation to the elementary-school children in those cases where the statute does not specifically state the grades for which conveyances shall be provided. There apparently is also a tendency in the southern states and in others to limit the application of transportation laws to those districts which receive some aid from the state.

Transportation a Local Matter

It has been justly held[26] that the district of residence is not liable for the transportation of children which are sent to another district without the consent of the school board. In the case in question a man resided two and one half miles from the nearest school in his district. This was far enough to enable him to recover for the transportation of his children. Instead of making arrangements with his board of education, he moved his wife and children to an adjoining district where the children attended school six and one half miles from their temporary home. This was three and one half miles farther than they lived from the school in their own district. The father brought suit to recover, and the district court awarded him the verdict. Upon appeal by the board of education, the decision was reversed.

In Arkanas the supreme court[27] has ruled that school funds may not be used to transport children to school outside the district since the law says nothing about transporting children from one district to another. And since such transportation is not authorized, any contract made for such transportation is void and cannot be ratified by performance.

The Indiana court[28] has rendered a decision stating that, where children live sufficiently distances from the nearest school in their district to demand transportation, the trustee may refuse transportation on the ground that there is a school in an adjoining district under the distance for which the children demand transportation. In another instance this same court[29] has held that the trustee of a school district whose school has been abandoned could not be compelled to furnish conveyance for a pupil to another district. The Ohio court[30] has held the same as the Indiana court in stating that the statutes do not require that transportation be furnished chil-

A. J. STODDARD
Superintendent of Schools-Elect,
Providence, R. I.

Mr. A. J. Stoddard, formerly superintendent of schools at Schenectady, N. Y., has been elected superintendent of schools at Providence, R. I., to succeed Mr. Isaac O. Winslow. Mr. Stoddard's appointment is for a three-year term, effective on August 15.

Mr. Stoddard was educated in the public schools of Nebraska and was graduated from the Peru State Normal and from the teachers' college of the University of Nebraska. He holds a degree from Teachers College, Columbia University, and has completed graduate work leading to a Ph.D. degree from the same institution. He began his educational career as a teacher in the rural and elementary schools of Nebraska, and was for eleven years superintendent of schools in the schools of the state. In 1922 he came to New York state as superintendent of schools in Bronxville, where he remained for four years. For the past three years he had been superintendent of schools at Schenectady.

Mr. Stoddard has been an instructor in the summer schools of the Peru State Normal and in the Connecticut Summer School for teachers at Yale University. He has delivered a number of addresses on educational topics and has written extensively on education for the periodical literature of the day.

Mr. Stoddard goes to Providence on a three-year contract, at a salary of $10,000, $11,000, and $12,000 respectively.

[11]Patterson v. Middle School Township, Hendricks County, (1912), 98 N. E. 440, 50 Ind. App. 460.
[12]Patton et al, Board of Education of Dover Township, v. State ex rel Hersey et al, (1919, 14 Ohio App. 64.
[13]State ex rel Matster v. Beamer et al, Board of Education of Carroll County, (1923), 141 N. E. 851, 109 Ohio St. 133.
[14]Dennis v. Wrigley et al, (1913), 141 N. W. 605, 175 Mich. 621.
[15]State ex rel to Use of Gastineau et al v. Smith et al, (1917), 196 S. W. 115, Mo. App.
[16]Gragg v. County Board of Education of Fayette County, et al, (1923), 252 S. W. 137, 200 Ky. 53.
[17]Mendenhall v. Slim Buttes District No. 4, Harding County, (1923), 196 N. W. 97, 47 S. D. 94.
[18]Board of Education of Frelinghuysen Township v. Atwood, (1906), 62 Atl. 1130, 73 N. N. L. 315. Same (1907), 65 Atl. 999, 74 N. J. L. 638.
[19]Carey v. Thomson et al, School Directors, (1894), 30 Atl. 5, 66 Vt. 665.
[20]In re Board of Education, Union District No. 2, Town of Brookhaven, Suffolk County, et al, (1925) 210 N. Y. S. 439, 214 App. Div. (N. Y.) 40.
[21]State ex rel Palmer County Attorney v. Crugan et al, (1926), 243 Pac. 329, 120 Kan. 316.
[22]Tow v. Dunbar Consolidated School District et al, (1925), 206 N. W. 94, 200 Iowa 1254.
[23]Jennings v. Carson County Judge et al, (1916), 184 S. W. 562, Tex. Cv. A.
[24]Hendrix v. Morris et al, (1917), 191 S. W. 949, 128 Ark. 222.
[25]McKenzie et al v. Board of Education of Floyd County, et al, (1924), 124 S. W. 721, 158, Ga. 892.
[26]Harris v. School District No. 48 of Pennington County, (1913), 143 N. W. 989, 32 S. D. 544 Ann. Case, 1916 a, 267.
[27]Board of Directors of School District of Gould et al v. Holdtoff, (1926), 285 S. W. 357, 171, Ark. 668.
[28]State ex rel Board v. Jackson, (1907), 81 N. E. 62, 168 Ind. 284.
[29]Nelson v. State ex rel Martin et al, (1907), 81 N. E. 486, 168 Ind. 491
[30]State ex rel Keller v. Board of Education of Licking County School District, (1918), 11 Ohio App. 298.

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The Duties of Public-School Administrators - IV.

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The previous articles in the present series have dealt with the general distribution of the duties of public-school principals and superintendents in various sections of the United States, with a detailed analysis of the field of educational administration known as *general control,* and with a special analysis of the administrative duties in the field of *executive management.* The present article continues the series with a detailed treatment of the field of *business management.* As in the other articles, the discussion is based upon a nation-wide survey of the duties performed by public-school principals and superintendents.

What are the jobs which superintendents, supervisors, and principals actually perform? There has been much generalization in recent years, and various organizations have engaged in an aggressive propaganda for enlarging the powers and strengthening the position of these school officials. It has remained for Professor Ayer to make a nation-wide study to determine what is done by school executives in the course of their daily, weekly, monthly, and yearly round of duties.

School-board members will find the present paper on Business Duties especially valuable. —Editor.

V. BUSINESS MANAGEMENT

The duties of business management are those which pertain to the financial and building aspects of school administration. An attempt is made at times to separate business administration from educational administration by limiting educational administration to the field of instruction. Business administration is in reality but one phase of educational administration, which, because of its special nature, stands out somewhat more distinctly as a separate unit than many of the other units of administrative activity. The business administration of a school system has as distinct educational objective as any other phase, and as a matter of fact there are few instructional situations which do not have certain business implications. It is advantageous at many times, both theoretically and practically, to consider business management as a separate phase of educational administration, but its identity as an integral part of the general educational program should never be lost sight of.

Out of the 1000 duties selected to cover the general field of public-school administration, there were 153 duties which fell into the field of business management, making it the second largest group of the 9 major divisions included. For purposes of greater facility in statistical treatment and literary explanation, the 153 duties of business management have been thrown into seven related groups, as follows:

1. Fiscal Management ..... 19 duties
2. Payroll and Cash Accounting..... 20 duties
3. Inspection and Care of the School Plant ..... 28 duties
4. Purchase of Supplies and Equipment ..... 24 duties
5. Construction and Repairs..... 24 duties
6. Supervision of Janitorial Services 20 duties
7. Building Programs and Surveys.. 18 duties

1. Fiscal Management

A study of the data which bear on the duties which public-school superintendents and principals perform in connection with fiscal management reveals the fact that these school executives, particularly the superintendents, are very largely concerned in both financial planning and accounting. The various duties which they perform are listed in Table XVI. Table XVI is made up of 19 duties in the field of fiscal management, arranged in order according to the percentage of superintendents who performed them during the year of this study, the most commonly performed duties appearing first. Thus ranked, they range in popularity of performance from the first duty, *Make out tentative school budget,* which was performed by 77 per cent of the 278 superintendents investigated, to the nineteenth duty, *Administer sale of bonds,* which was performed by only 5 per cent.

Table XVI also shows the percentages of general (combined elementary and high) principals, high-school principals, and elementary-school principals, respectively, who performed the same duties. For example, in the first duty, *Make out tentative budget,* there were 77 per cent of the superintendents who performed it during the year; 36 per cent of the general principals; 26 per cent of the high-school principals, and 29 per cent of the elementary-school principals. The next to the last column shows the median frequency with which the various duties were performed by the superintendents, the above duty, for example, being performed once a year. The last column shows the degree of administrative importance attached to each duty by the median of 50 judges, graded on a basis of 1 for primary importance, 2 for average importance, 3 for little importance, and 0 for no importance. The importance in each case was judged from the point of view of a superintendent performing the duty.

It may be seen from Table XVI that the duties of fiscal management are performed much more commonly by the superintendent than by any of the principals. On the average, 36 per cent of the superintendents perform the various duties; 15 per cent of the general principals; 13 per cent of the high-school principals; and 9 per cent of the elementary principals. The principals, in particular the elementary principals, seldom have anything to do with bonds, loans, and financial appropriations. In the important matter of budgeting, it appears that approximately three-fourths of the superintendents budget their expenditures in contrast to from one fourth to one third of the principals. These budgets apparently are approved by the school board in nearly all cases, but are printed in only a minority of cases. The returns do not reveal to what extent any of these same fiscal duties are performed by clerks, business managers, or other purely business officers, but they do indicate a fairly heavy participation on the part of the superintendents and principals. Practically all of these fiscal duties listed in Table XVI are performed on a yearly basis, and the great majority were judged to be of primary administrative importance (See final column in Table XVI.) The duties judged to be of second and third importance were performed, on the whole, by fewer administrators, as is indicated by their appearance in the lower half of the table.

TABLE XVI. THE ADMINISTRATIVE DUTIES PERTAINING TO FISCAL MANAGEMENT
(Frequencies are d for daily, w for weekly, m for monthly, y for yearly, y^2 for two times a year, etc. Values are 1 for primary, 2 for average, 3 for minor, and 0 for no importance.)

	DUTY	Percentage of Administrators Performing			Median Frequency	Median Value
		Supt.	Gen. Prin	H. S. Prin	E. S. Prin	
1.	Make out tentative school budget	77	36	26	29	y	1*
2.	Have budget approved by board	72	32	21	29	y	1*
3.	Estimate tuition rates	64	36	26	5	y	1*
4.	Prepare annual report on school property	61	30	29	44	y	1*
5.	Prepare annual financial report	56	23	22	17	y	1*
6.	Prepare fiscal calendar	51	26	17	12	y	1*
7.	Prepare statement of income and disbursements	46	23	21	20	y	1*
8.	Prepare application for regular State appropriation	39	18	10	7	y	1*
9.	Prepare application for special subvention (Smith-Hughes, et al)	39	9	9	0	y	1*
10.	Prepare statement showing expenditures by functions	34	14	23	5	y	1*
11.	Prepare statement showing expenditures by buildings	27	5	9	7	y	1*
12.	Keep budget ledger	26	8	6	5	y^2	2
13.	Prepare monthly balances of appropriations	25	3	7	5	m	2
14.	Have school budget printed	22	8	6	5	y	2
15.	Plan bond issue	18	6	3	0	y	1*
16.	Arrange for loans to school district	10	3	3	0	y	2
17.	Post notice of bond issue	8	0	2	2	y	3
18.	Have papers executed for bond issue	8	0	2	0	y	2
19.	Administer sale of bonds	5	0	2	0	y	2
	Average	36	15	13	9		

*More than one half of the judges assigned this value.

2. Payroll and Cash Accounting

Closely allied to the foregoing duties of fiscal management, but considerably more clerical in character, are 20 duties which pertain to payroll and cash accounting. Although these duties as a group are judged to be of distinctly less importance than those of fiscal management, they are performed more frequently by public-school executives. This fact is revealed in Table XVII, which lists the 20 duties, arranged and designated as in Table XVI. Only two of the duties listed in Table XVII, *Adjust salaries for absences* and *Arrange payrolls,* were judged to be of primary administrative importance from the point of view of the amount of attention that the superintendent should give to them. Practically all of the others, many of which are performed regularly by large numbers of administrators, were rated as of little or no importance. Each of the three groups of principals participates more extensively in connection with payroll and cash accounting duties than with the duties of fiscal management. The principals perform many of the duties, such as *Act as treasurer for school clubs,* as commonly as do the superintendents.

Despite the relative lack of administrative importance assigned to the duties listed in Table XVII, the wide general participation on the part of administrative officers indicates the necessity of superintendents and principals becoming familiar with at least the essentials of cash accounting. This is particularly true for the considerable number who handle special funds and act as treasurer for various school organizations. Too many failures on the part of school executives have been attributable to loose or faulty accounting of school finances.

3. Inspection and Care of the School Plant

When we turn to the duties which are involved in the inspection and care of the school plant, we are confronted by a wide array of varied duties which are regularly performed by conspicuously large numbers of superintendents and principals. Table XVIII, which lists this group of duties in order of popularity of performance by school superintendents, contains 28 such duties.

The outstanding features of this set of inspectional and caretaking duties is the fact that the principals, and particularly the elementary-school principals, almost without exception perform this type of duty as commonly as do the superintendents. The only duties which the superintendents perform in any degree more commonly than the principals are the two: *Determine placement of supplies,* and *Supply schools with health and play equipment.* The high-school principals are considerably less given

TABLE XVII. ADMINISTRATIVE DUTIES PERTAINING TO PAYROLL AND CASH ACCOUNTING
(Frequencies are d for daily, w for weekly, m for monthly, y for yearly, y^2 for two times a year, etc. Values are 1 for primary, 2 for average, 3 for minor, and 0 for no importance.)

	DUTY	Percentage of Administrators Performing				Median Frequency	Median Value
		Supt.	Gen. Prin	H. S. Prin	E. S. Prin	Supt.	
1.	Distribute pay checks	69	53	53	71	m	2
2.	Make bank deposits	68	58	55	46	m^2	3
3.	Handle special funds (e. g., Christmas seal money)	66	73	64	63	y	3
4.	Adjust salaries for absences	65	38	24	34	m	1
5.	Prepare tuition statement	62	41	38	17	y^2	2
6.	Arrange payrolls	59	25	24	32	m	1*
7.	Check petty cash	56	41	34	37	m	3
8.	Prepare statement for cash income and disbursements	49	26	26	27	y^5	2
9.	Collect tuition	47	27	26	12	m	2
10.	Act as treasurer for school athletic association	39	49	42	24	y	0*
11.	Act as treasurer for school clubs	29	38	24	26	y^2	0*
12.	Keep payroll ledger	28	8	12	20	m	2
13.	File vouchers	27	8	10	12	m	2
14.	Issue warrants	20	6	9	0	m	3
15.	Keep accounts payable ledger	18	6	10	10	m	2
16.	Arrange with banks to cash warrants	15	11	3	7	y	3
17.	Act as treasurer for school publications	15	17	19	10	y	0*
18.	Collect rents	12	9	7	0	m	3
19.	Receive and return deposits of bidders	8	3	5	0	y	3
20.	Act as treasurer for school cafeteria	4	8	5	12	m^2	0*
	Average	38	27	26	23		

*More than one half of the judges assigned this value.

TABLE XVIII. ADMINISTRATIVE DUTIES PERTAINING TO INSPECTION AND CARE OF THE SCHOOL PLANT
(Frequencies are d for daily, w for weekly, m for monthly, y for yearly, y^2 for two times a year, etc. Values are 1 for primary, 2 for average, 3 for minor, and 0 for no importance.)

	DUTY	Percentage of Administrators Performing				Median Frequency	Median Value
		Supt.	Gen. Prin	H. S. Prin	E. S. Prin	Supt.	
1.	Inspect toilets	93	99	93	93	w	2
2.	Inspect defacement of school building	84	96	84	73	m	2
3.	Inspect textbooks and supplies	83	79	78	85	m	2
4.	Supervise heating, lighting, and ventilation	80	88	70	76	w	1
5.	Determine placement of supplies	79	70	50	66	y^4	2
6.	Distribute supplies to teachers	78	67	60	85	m	3
7.	Look after janitor supplies	72	53	36	71	y^5	3*
8.	Make inventory of school supplies	69	68	64	68	y	2
9.	Distribute supplementary reading materials	66	74	27	59	m	3
10.	Supervise beautifying of school rooms	60	64	58	44	y^2	3*
11.	Supply schools with health and play equipment	58	47	19	34	y	1*
12.	Supervise cleaning of school grounds	56	73	52	68	y^2	3
13.	Collect fines for misuse of books and supplies	46	30	38	46	y^3	3
14.	Keep record of distribution of supplies	46	44	29	57	m	2
15.	Supervise landscaping of school yards	42	38	24	37	y	2
16.	Report on State textbooks owned by district	40	17	13	51	y	1
17.	Take care of musical instruments	31	24	21	41	y^2	0*
18.	Regulate clock and signal system	31	40	46	32	m	3
19.	Supervise Arbor Day tree planting	31	43	26	37	y	2
20.	Inspect service department	28	27	21	20	m	2
21.	Assist in cleaning school grounds	28	47	32	37	y^2	0*
22.	Schedule motion picture exhibition	27	35	29	41	y^3	3
23.	Administer use of lanterns and slides	25	33	35	29	m	3
24.	Set up or adjust seats	20	41	28	34	y^3	0*
25.	Care for plants and flowers	20	11	8	44	m	0*
26.	Wind and set clocks	18	29	28	32	w	0*
27.	Substitute for janitor	13	15	13	22	y^2	0*
28.	Supervise school garden work	5	6	3	20	y	3
	Average	47	48	39	50		

*More than one half of the judges assigned this value.

to the performance of these duties than are the other school executives. They lead in performing the duties, *Regulate clock and signal system* and *Administer use of lantern and slides.* The elementary principals lead the other executives in a considerable number of the duties, notably with the distribution of supplies to teachers, the care of musical instruments, and the care of plants, flowers, and school gardens.

It is evident that school executives as a group take their property-inspectional duties seriously. These duties, such as *Inspect toilet* and *Inspect defacement of school buildings,* not only head the list, but are performed with comparatively high frequencies. About 7 out of 10 executives make inventories of school supplies, but only 4 or 5 out of 10 keep records of the distribution of supplies. An examination of the details of Table XVIII reveals the fact that school executives commonly perform many duties which are clearly janitorial in character. Something like 1 out of 6 substitutes for the janitor 2 or 3 times during the year, and considerably larger numbers regularly perform such duties as *Set up and adjust seats, Assist in cleaning school grounds,* and *Regulate clock and signal system.*

There are very few of these inspectional and caretaking duties which can be said to be of primary administrative importance. The 50 judges list three as such: *Supervise heating, lighting, and ventilation,* which was performed on a weekly basis, *Determine placement of supplies,* which was performed on a weekly basis; and *Report on state textbooks,* which was performed once a year. The general spread of two familiar administrative practices is indicated in the following performance records: *Collect fines for misuse of books and supplies,* which was performed by about 4 out of 10 executives; and *Supervise Arbor Day tree planting,* which was performed by from 3 to 4 out of 10 executives. The majority of the duties listed in Table XVIII were voted to be of little or no administrative significance. A considerable number of them might very well be delegated to a competent janitor. Unfortunately, this species is none too common, and this fact probably accounts for the large numbers of near-janitorial duties that are performed more or less regularly by the several groups of executive officers.

4. Purchase of Supplies and Equipment

The purchase of supplies and equipment involves a group of 24 administrative duties which, as a whole, lie at a considerably higher level than the group of inspectional and caretaking duties just considered. As may be seen from an inspection of Table XIX, in which these duties are listed, they are performed very commonly by public-school administrators, especially by superintendents. As a matter of fact, this particular set of duties is one of the most popular with superintendents of the entire 100 administrative duties listed in the present study, ranging from the duty, *Interview salesman of supplies,* which is performed by 95 per cent of the 278 superintendents with a median frequency of twice a month, to the duty, *Purchase supplies for lunchrooms,* which is performed by 13 per cent of the superintendents on an average of 4 times a year. The average percentile performance of the superintendents in connection with the entire set of duties is 54. The principals perform them somewhat less commonly, particularly the elementary principals, whose general average for the group is but 21 per cent. Almost without exception in this set of duties, the superintendent is the most common performer, then the general principal, then the high-school principal, and finally the elementary principal. The only duty in which all the executive officers make an essentially equal showing is with the least commonly performed one, namely, *Purchase supplies for lunchroom.* The superintendent leads with every duty in the list save *Purchase athletic supplies and equipment,* in which he is considerably surpassed by the general and high-school principals; and in the matter of handling programs, tickets, etc., in which he is equaled. It is quite apparent, however, that all types of administrative officers are likely to come into executive contact with practically any and all of these duties, with the occasional exception of the elementary principal.

It may be seen from an inspection of Table XIX that the superintendents and principals do more of the selecting and ordering than of the paying and accounting in connection with supplies and equipment, although here again, as with the duties of inspection and caretaking, there is a fairly heavy performance of duties which might very well be cared for by a subordinate officer, such as a school clerk, or in the larger cities, by a business manager. The duties exhibited in Table XIX are all performed on a monthly or yearly basis, being for the most part somewhat irregular and not administered according to a given schedule. Many of the duties are judged to be of primary importance, and only three of them are ranked as low as third in importance. These three are: *Report data to book companies, Arrange printing of tickets, etc.,* and *Purchase athletic supplies,* none of which is particularly immediate to a standard educational program. All in all, it is evident that the duties attached to the purchase of supplies and equipment are of genuine administrative importance, and that they require a definite amount of personal attention on the part of the executives in charge of the instructional program.

5. Construction and Repairs

The activities of public-school administrators in connection with the school plant are by no means limited to items of inspection and purchase. The great majority of principals and su-

TABLE XIX. ADMINISTRATIVE DUTIES PERTAINING TO THE PURCHASE OF SUPPLIES AND EQUIPMENT
(Tabular arrangement and symbols as in Table XVIII.)

	DUTY	Percentage of Administrators Performing				Median Frequency	Median Value
		Supt.	Gen. Prin	H. S. Prin	E. S. Prin	Supt.	
1.	Interview salesmen of supplies	95	85	78	45	m^2	2
2.	Order textbooks	93	84	74	44	y^2	1*
3.	Study price and quality of supplies	93	84	66	34	m	1*
4.	Check bills for supplies	85	84	60	41	m	2
5.	Report data to book companies	82	62	79	22	y^4	3*
6.	Check receipts of supplies	80	87	66	49	m	2
7.	Arrange printing and distribution of tickets, programs, etc.	78	78	79	49	y^7	3
8.	Estimate cost of equipment	73	55	51	24	y	1*
9.	Look after delayed orders	60	50	35	39	y^3	2
10.	Purchase athletic supplies and equipment	57	79	74	46	y^3	3
11.	Make specifications for equipment	56	40	43	12	y	1*
12.	Pay bills for supplies	47	36	31	12	m	2
13.	Secure bids on supplies	47	24	27	15	y	1*
14.	Purchase supplies for home economics department	39	27	14	5	y^2	2
15.	Recommend bids	37	18	20	2	y	1*
16.	Submit bids to board of education for selection	37	15	14	12	y	1
17.	Attend correspondence with bidders	36	15	21	0	y	2
18.	Prepare bidders' lists	35	18	16	2	y	2
19.	Keep register for purchases of supplies	34	26	20	17	m	2
20.	Purchase supplies for manual training department	31	26	17	15	y^2	2
21.	Open bids—tabulate results	31	14	15	0	y	2
22.	Charge purchases against available appropriation	29	13	17	12	m	2
23.	Arrange meeting for presentation of samples	27	14	14	0	y	2
24.	Purchase supplies for lunch rooms	13	12	9	10	y^4	2
	Average	54	44	39	21		

*More than one half of the judges assigned this value.

TABLE XX. ADMINISTRATIVE DUTIES PERTAINING TO CONSTRUCTION AND REPAIRS
(Tabular arrangement and symbols as in Table XVIII.)

DUTY	Percentage of Administrators Performing				Median Frequency	Median Value
	Supt.	Gen. Prin	H. S. Prin	E. S. Prin	Supt.	
1. Plan summer repairs	86	62	50	54	y	1*
2. Purchase equipment replacements	82	55	48	22	y	2
3. Determine placement of equipment	76	76	48	56	y	2
4. Get school plant in order for new term	75	65	58	66	y	1*
5. Direct emergency repairs	71	62	50	49	y[2]	2
6. Install new equipment	68	64	50	51	y	3
7. Plan major repairs	68	56	32	51	y	1*
8. Plan additions to stationary equipment	58	50	31	34	y	2*
9. Supervise leveling and grading playground	47	46	17	34	y	2
10. Supervise major repairs	47	36	14	15	y	2
11. Record job costs of repairs	29	14	8	12	y	2
12. Check job cost sheets	24	15	7	5	y	2
13. Select building site	14	6	5	0	y	2
14. Personally inspect building during construction	14	9	6	2	m[2]	1*
15. Standardize repair costs	13	8	1	5	y	2
16. Locate building on site	10	8	5	2	y	1*
17. Advertise for builders' bids	9	2	6	0	y	2
18. Record payments made on buildings	8	2	5	0	y[2]	2
19. Accept bond of successful bidder	7	0	3	0	y	3
20. Make payments on building	7	2	3	0	m	0
21. Purchase building site	6	0	1	0	y	3
22. Keep record of progress of construction	5	5	5	0	m	2
23. Obtain options on site	3	0	2	2	y	2
24. Appoint inspector	2	0	1	0	y	3
Average	35	27	19	19		

*More than one half of the judges assigned this value.

perintendents sometimes during the year become more or less heavily involved in the matter of repair and construction. This fact is amply substantiated by the data which appear in Table XX, which lists the duties actually performed by superintendents and principals in connection with building repairs and constructional activities.

The repair and constructional duties listed in Table XX are, on the whole, performed much more commonly by superintendents than by the several groups of principals, particularly those duties dealing with the financial aspect of construction. There is, on the other hand, a quite general participation by all groups in the more commonly performed duties listed in the upper half of the table, such as *Plan summer repairs, Install new equipment, Supervise major repairs,* etc. The fourth duty, *Get school plant in order for new term,* is one which it would seem might reasonably be performed by even greater numbers than those reporting. A good many of the constructional duties listed in the lower half of the table depend upon the advent of building construction during the year of the study, rather than upon the lack of interest or ability on the part of the school executives concerned.

The constructional duties listed in Table XX are widely spread as to administrative importance. Items such as planning major repairs, locating buildings on sites, and inspecting buildings during construction are held to be of first importance as a superintendent's duty; but most of the remaining duties are considered to be of average importance. Comparatively few are held to be of little or no administrative importance. The great majority are performed on an annual basis, and in general are deliberately planned rather than emergency activities. It is impossible to say exactly how many buildings were under construction during the year, but it seems probable that the superintendent of schools usually makes a business of personally inspecting buildings during construction, a duty which was voted by a heavy majority of the 50 judges to be of primary importance.

6. Inspection and Supervision of Janitorial Service

One of the moot points in public-school administration concerns the administrative relation which should exist between school executives and janitors. Superintendents and building principals usually think, and rightly I believe, that they personally should be in immediate administrative control of janitorial work. Whatever the exact status of this administrative relationship may be, there is no question concerning the numerous contacts which public-school administrators actually have with the inspection and supervision of janitorial services. This is made plain by the statistical and interpretative data contained in Table XXI, which lists 20 duties in this field. These 20 duties involve both superintendents and principals and are closely allied to the inspectional and caretaking duties listed in Table XVIII. Taken together, the total list of what may be called school plant caretaking duties is surprisingly large. Other data, not shown here, indicate that the superintendents perform nearly all of these duties as frequently or more so than the principals. This, however, is not true of the immediate inspection of janitorial work, which the principals on the average do daily and the superintendents do weekly.

There is little need for supplementary comment concerning the duties listed in Table XXI, as most of the items carry their own special interest. The duties are about evenly divided as to administrative importance into duties of primary, of average, and of little value. It is generally conceded by educational writers that the janitor plays a very important part in the running of a successful school program. This theory seems to be born out by the numerous contacts which school executives find necessary to have with him and the various means which are used to improve his services.

TABLE XXI. ADMINISTRATIVE DUTIES PERTAINING TO SUPERVISION OF JANITORIAL SERVICE
(Tabular arrangement and symbols as in Table XVIII.)

DUTY	Percentage of Administrators Performing				Median Frequency	Median Value
	Supt.	Gen. Prin	H. S. Prin	E. S. Prin	Supt.	
1. Inspect janitor work	93	91	87	83	w	1*
2. Confer with janitor about preparation of building for exhibition or entertainment	80	82	80	76	m	2
3. Confer with janitor about condition of rooms	76	79	73	61	m	2
4. Confer with janitor about part of building that needs cleaning	74	74	72	61	m	2
5. Confer with janitor about keeping playgrounds clean	72	67	42	56	m	2
6. Notify janitor of special use of buildings	66	61	59	51	m	1
7. Confer with janitor about leaks in pipes	59	53	58	51	y[3]	2
8. Help janitor in arrangement of maps, chairs, pictures, etc.	57	62	51	46	m	3*
9. Confer with janitor about ringing bells	54	55	45	39	y[2]	2
10. Confer with janitors about moving heavy objects	52	47	55	51	y[5]	3
11. Confer with janitors about laws regarding condition of buildings	51	53	32	34	y	1*
12. Show janitor how to operate apparatus	44	36	32	27	m	3
13. Employ janitor	44	12	12	24	y	1*
14. Confer with janitors about legal methods of cleaning	44	52	26	22	y[2]	1
15. Secure substitute janitor	28	14	17	22	y	1*
16. Check janitor's report	21	21	13	32	y[3]	2
17. Assist janitor make reports	14	15	10	27	y[4]	3
18. Discharge janitor	13	5	7	7	y	1*
19. Arrange course for janitors	7	2	1	7	y	2
20. Teach janitor course	4	0	2	5	y	3
Average	53	44	39	39		

*More than one half of the judges assigned this value.

7. Building Programs and Surveys

Finally, we come to the phase of business management which involves the building program, a phase of school administration which is universally conceded to be of distinct importance. Here, the needs of instruction, on the one hand, and the interests of so-called business, on the other, become so intimately associated that it is quite impossible to treat them adequately as separate or distinct aspects of administration.

The expansion of the school plant involves 18 administrative duties which are here listed as Table XXII. The actual number of school executives participating in these duties as shown in Table XXII cannot be taken as a complete index inasmuch as the present study covered a single year's work, and many of these duties do not come up regularly every year. From the comparative point of view the data are more significant. Making allowance for the comparatively limited duration of the study, they show a commendable participation on the part of school executives in duties of this type. Naturally, the school superintendent leads the principals in the performance of these duties, but it is evident that the principals as a group play an important part in connection with the building program. It is likewise evident that old school buildings everywhere are being surveyed and that modifications or new structures are very generally being recommended.

All of the duties listed in Table XXII are performed upon an annual basis, and there was a very general unanimity of opinion among the 50 judges rating them that, with the exception of three, all of the duties listed were of primary administrative importance. No doubt, some of the duties listed in Table XXII, such as *Secure fire insurance for buildings,* or *Employ architect,* might well be performed by some one other than the superintendent or principal in person; but taken as a group these particular duties constitute one of the major services attached to the public-school superintendency, and a service in which building principals as well have no little interest. The facts displayed in Table XXII are well worthy of careful study.

TABLE XXII. ADMINISTRATIVE DUTIES PERTAINING TO BUILDING PROGRAMS AND SURVEYS
(Tabular arrangement and symbols as in Table XVIII.)

DUTY	Percentage of Administrators Performing				Median Frequency	Median Value
	Supt.	Gen. Prin	H. S. Prin	E. S. Prin	Supt.	
1. Compute school population growth	57	38	26	27	y	1*
2. Recommend modifications of old buildings	50	41	34	29	y	1*
3. Prepare report on existing buildings	48	40	31	29	y	1*
4. Study transportation facilities	42	38	21	17	y	1*
5. Prepare estimate of cost of maintenance	38	15	10	7	y	1*
6. Study building plans	36	29	23	15	y	1*
7. Study law on school bond issues	33	15	16	12	y	1*
8. Consult architect	30	23	8	5	y[2]	1*
9. Score existing buildings	26	21	14	20	y	1*
10. Secure fire insurance for buildings	26	8	13	2	y	2
11. Recommend types of new buildings	25	17	8	15	y	1*
12. Check architect's plans	24	20	9	5	y[2]	1*
13. Estimate size and location of new buildings	21	17	10	2	y	1*
14. Prepare plan of financing building program	21	5	3	2	y	1*
15. Draw tentative plans for buildings	19	15	5	2	y	2
16. Secure estimates as to cost of building sites	12	11	3	2	y	1*
17. Establish boundaries for new schools	10	5	6	2	y	1*
18. Employ architect	10	0	1	0	y	2
Average	28	20	13	11		

*More than one half of the judges assigned this value.

Saving Fuel Costs in School Heating

New Type of Heating System in the Douglass, Kansas, High School

Harold L. Alt, Heating Engineer and Consultant, Philadelphia, Pa.

There is probably no type of building in America which arouses more general interest on the part of the average man than the school building. From Mexico to Canada and from coast to coast new school buildings are constantly being erected, at the cost of the taxpayers, and the children of the general public are compelled to receive instruction within their walls.

School boards throughout the country are giving the closest attention to the details of planning and constructing new schools, and in most communities every item comes in for close scrutiny. The rising cost and complexity of the mechanical equipment has been the compelling reason why heating and ventilating apparatus, electrical devices, etc., have received especial attention at the hands of school-board members and school executives.

One of the most serious items of operating expenses in nearly all schools is the annual fuel bill. Only when schools are located in the extreme southern part of the country can the approach of cold weather be viewed without alarm by those responsible for keeping of the school buildings adequately supplied with fuel. In the northern states of the country the matter assumes real financial importance, and any means of producing a more desirable and uniform heating, while at the same time reducing the fuel cost, is bound to be welcomed by careful consideration.

The problem of heating and fuel costs was an acute one when the need for a new heating plant was brought to the attention of the school board in charge of the Douglass high school at Douglass, Kansas. Here was a building three stories high, having a total cubage of 229,320 cu. ft., built ten to twelve years ago and heated by a fan-blast system.

Architecturally and structurally the building is in a very satisfactory condition, as will be seen by referring to the illustration accompanying this article. The heating system, however, was not giving the satisfaction which it should, and the fuel consumption seemed to be excessive and

THE DOUGLASS HIGH SCHOOL, DOUGLASS, KANS., IS A SUBSTANTIAL BRICK STRUCTURE

wasteful. Considerable thought and study was given by Supt. E. Floyd Greer to the matter of altering the heating plant. Mr. Greer's investigation resulted in a recommendation that the board of education discard the fan-blast system for direct steam radiation. Contracts were let for an entirely different system of heating, and a careful comparative check of classroom temperature, fuel consumption, and costs was set up to determine the savings of the new system.

The changes in the heating plant were made during the summer of 1927, at which time some 65 radiators with a total heating surface of 4,565 sq. ft. were installed. During the following winter of 1927-28 steam was circulated through these radiators at sub-atmospheric pressure. As a result, the fuel bill, which had amounted to $507.76 during the winter of 1926-27, with the old system, dropped to $373.98 during the winter of 1927-28. The cost of heating per cubic foot was thus lowered from $0.0022 to $0.00163, which, expressed in percentage, is a reduction of 25.8 per cent.

It is interesting and important to know by what means an economy of such proportions was possible. It is perhaps more important to know whether the heating results obtained are better or worse than with the previous system which was 25 per cent more costly to run. To answer the second question first: Mr. Greer states that "we are entirely satisfied with the operation of the new (heating system)," which would indicate that the heating results are at least as satisfactory as the previous systems. The additional economy is a *real* economy and is not secured at the expense of comfort or through inadequate heating.

In the Douglass high school, the fan-blast heating system was changed over to a vacuum-steam system of the fixed-differential type. The new system operates on a vacuum up to 25 inches in mild weather, while, in extremely cold weather, the vacuum may be decreased until it disappears and is replaced with steam pressure of 2 to 5 pounds. This is accomplished by throttling the steam supply to the radiators on mild days so that the vacuum increases and the temperature of the steam lowers. Thus the heat emission from the radiators is reduced and can be controlled by simply changing the amount of vacuum carried in the pipes and radiators. A simple regulator always keeps the vacuum pump pulling just a little higher vacuum in the return lines than exists in the steam pipes, and this maintains the circulation in the system by drawing all the condensation back to the pump as fast as it is formed.

The importance of the arrangement described becomes more apparent when it is remembered that moderate weather constitutes from 80 to 95 per cent of the entire winter heating season. When extreme outside temperature does not prevail, it is not necessary in most schoolrooms to maintain the radiators at the extreme heat produced by steam under pressure; in fact, relatively mild heat will keep the room temperature rather constant and will prevent the stuffy over-

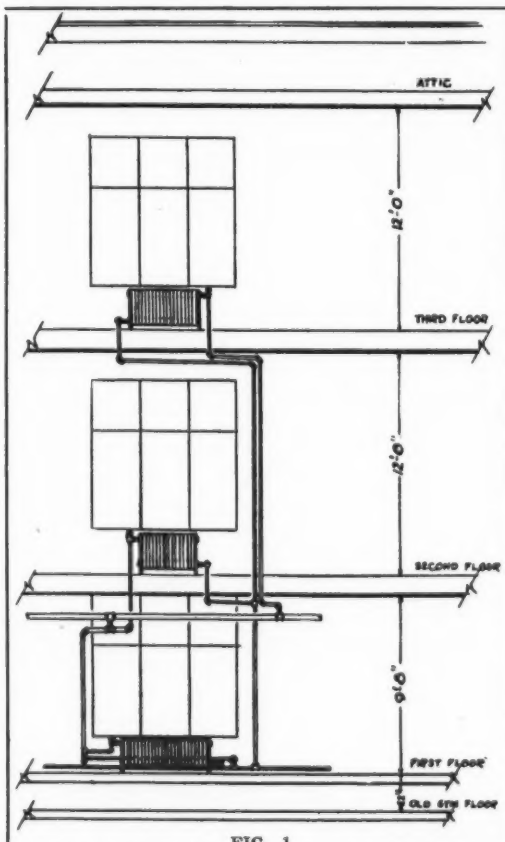


FIG. 1
Cross section plan of the Douglass High School showing the typical radiator connections used for the Fixed-Differential Vacuum-Steam Heating.

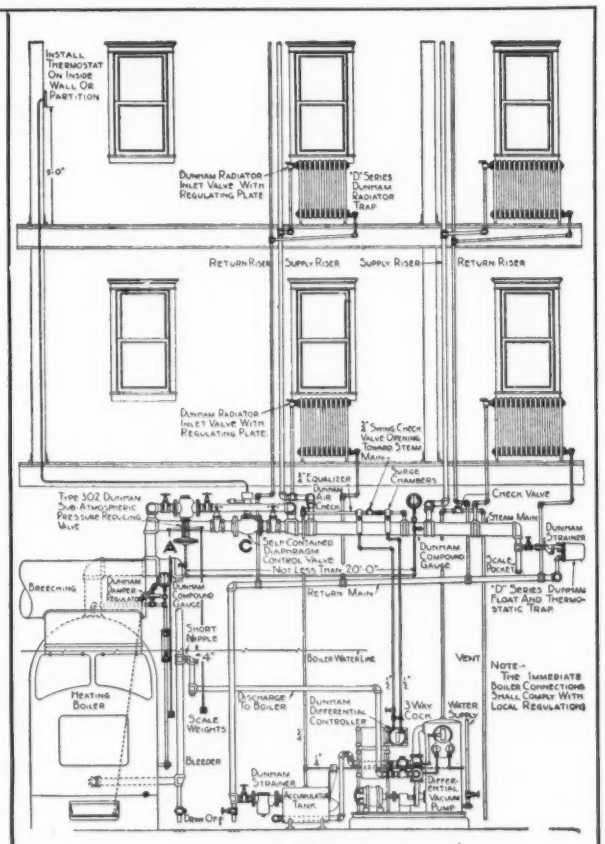


FIG. 2
Details of a Fixed-Differential Vacuum-Steam Heating Plant similar to the installation in the Douglass High School.

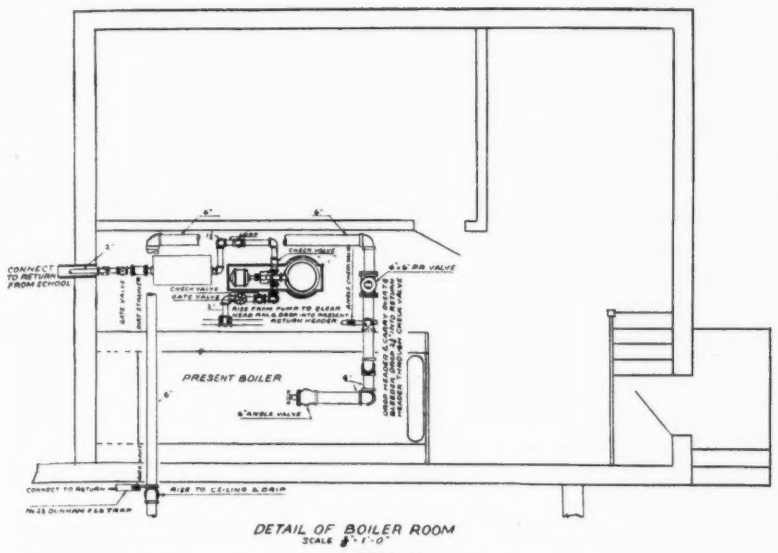

CONNECT TO RETURN FROM SCHOOL
CHECK VALVE
GATE VALVE
6"x6" PR VALVE
RISE FROM PUMP TO CLEAR HEAD AND DROP INTO PRESENT RETURN HEADER
PRESENT BOILER
6" ANGLE VALVE
CONNECT TO RETURN
RISE TO CEILING & DRIP
DETAIL OF BOILER ROOM
SCALE 1/8" = 1'-0"

FIG. 3
Floor Plan of the Boiler Room in the Douglass High School. The new apparatus was installed without structural changes.

heating which can in most cases be relieved only by opening the windows and thus wasting heat. It is steam produced at a comparatively low temperature under a high vacuum, that is the best practical means of keeping classroom radiators active without overheating during moderate weather.

It is a well-known fact that it takes a stated number of pounds of coal to produce a stated number of pounds of steam in a given boiler. If in mild weather the necessary steam can be spread through an entire system at a relatively lower temperature, considerable saving will be effected.

In the Douglass high school steam is taken from an existing boiler, by means of a 6-inch steam main in which 4-inch and 6-inch subatmospheric pressure-reducing valves are installed. Two compound gauges are used, one being placed on the boiler and one on the steam main beyond the reducing valves. The steam main is carried around the ceiling of the ground floor, with branches to the first-floor radiators taken off the bottom of the main at a 45 degree angle. The bottoms of all steam risers are dripped into the return main through drip traps.

The return mains are carried all around the ground floor, so as to pick up the various return risers and drips, and are collected together into one common line which is carried back to the boiler room in split tile. In the boiler room (see plan) the main return is connected to the accumulator of a Dunham differential vacuum pump. The vacuum pump then takes the return condensation and delivers it into the boiler.

Each radiator is equipped with a Dunham packless radiator valve on the supply end and a Dunham thermostatic radiator trap, capable of functioning under subatmospheric pressures, on the return end. In other respects, the system is similar to a common vacuum return-line system.

The reason that such high economies are obtained is simply that *overheating* is *eliminated*. The only essentials are a vacuum pump which will produce vacuums up to 26 inches of mercury, radiator traps which will satisfactorily operate on a range of pressure from 2 lb. gauge to 26 inches of mercury, and a differential controller which starts the vacuum pump everytime the vacuum in the return line begins to approach the vacuum then existing in the steam main.

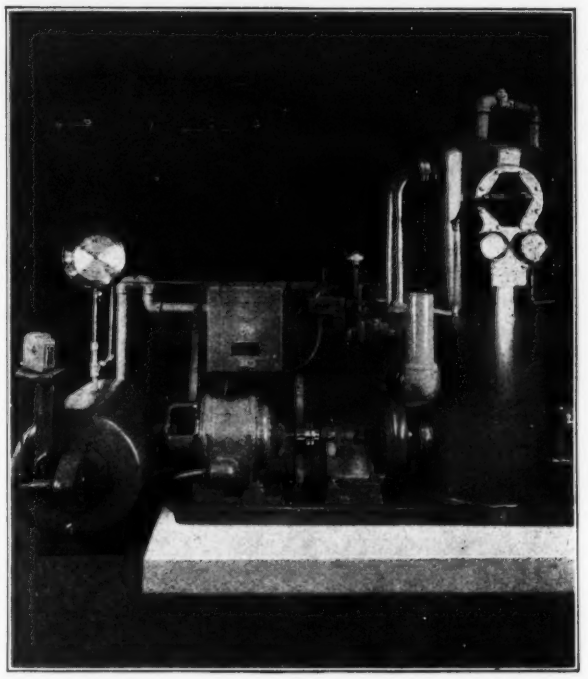


FIG. 4
Apparatus used in the Douglass High School for maintaining vacuum.

It is from this combination of features that the system takes its name of "fixed differential"; there is at all times a fixed difference in the pressure (vacuum) maintained between the radiation and the returns. As the pressure is reduced to a greater degree in the return, it follows that no matter what may be the pressure or vacuum maintained in the steam line, there will always be a positive tendency for the condensation and air in the system to flow back to the vacuum pump.

Program of the National Association of School Business Officials

The officers of the National Association of Public-School Business Officials have announced the completion of the tentative program for the eighteenth annual meeting of the association, which will be held May 21 to 24, at Columbus, Ohio. The headquarters for the meeting will be in the Deshler Wallick Hotel.

The Program

Tuesday Morning, May 21

Address of welcome—Hon. M. Y. Cooper, governor of Ohio.

Response—Mr. W. E. Record.

President's Address—Mr. George King, Salt Lake City, Utah.

Reports of the treasurer and secretary.

The Development and Use of a Detailed Budget—Mr. E. T. Stretcher, clerk of the board of education, Portland, Oreg.

A Study in Maintenance of School Buildings—Mr. R. E. Tilt, superintendent of buildings and grounds, Western Reserve Academy, Hudson, Ohio.

Outline of Arrangements for Visiting Columbus Schools—Mr. Howard Dwight Smith, architect of the board of education, Columbus, Ohio.

Tuesday Afternoon, May 21

Rehabilitation of Obsolete School Buildings—Mr. Howard Dwight Smith, architect of the board of education, Columbus, Ohio.

Reports of committees on research, school janitor-engineers, school floors, purchase of school supplies, fire insurance, and pupil cost accounting.

Round Tables: Tuesday Evening, May 21

Training School Janitor-Engineers—Mr. R. W. Adkinson, clerk of the board of education, Okmulgee, Okla., chairman.

Treatment and Care of Floors in School Buildings—Mr. John W. Lewis, director of school business, Baltimore, Md., chairman.

MR. GEORGE KING
Salt Lake City, Utah,
President, National Association of Public-School Business Officials.

The Selection, Purchase, Storage, and Distribution of Public-School Supplies—Mr. E. M. Brown, commissioner of supplies, board of education, St. Louis, Mo., chairman.

Fire and Other Insurance for Public-School Property—Mr. H. C. Roberts, secretary, board of education, Sioux City, Iowa, chairman.

Public-School Pupil-Cost Accounting—Mr. R. L. Daly, auditor of the board of education, St. Louis, Mo., chairman.

Wednesday Morning, May 22

Vocational Education—Mr. F. B. Edmunds, member of the board of education, Toronto, Can.

A Phase of Business Administration Problems—Dr. E. E. Lewis, department of business administration, Ohio State University.

The Los Angeles School for Janitors—Mr. Howard Campion, principal of the Wiggins Trade School, Los Angeles, Calif.

Facilitating the Purchase of Specification Made Goods—Mr. A. S. McAllister, chief of the division of specifications, National Bureau of Standards.

Thursday Morning, May 23

The Work-Study-Play Program of Gary, Indiana and Its Costs—Mr. A. H. Bell, auditor of the board of education, Gary, Ind.

The Capacity Use of School Buildings—Mr. H. G. McGee, director of municipal research, Akron, Ohio.

Schoolhouse Planning—Dr. P. C. Packer, University of Iowa, Iowa City.

Friday Morning, May 24

Keeping the Public Informed of Public-School Activities—Mr. Fred Charles, director of the division of publications, board of education, Cleveland, Ohio.

Some Practical Economies in Public-School Activities—Mr. G. E. Roudebush, assistant superintendent of schools, Columbus, Ohio.

The Future Outlook in the Financing of Public Schools.

Friday Afternoon, May 24

Reports of committees on a handbook of accounting, a uniform system of cost finding, auditing, and resolutions.

New business and election of officers for the ensuing year.

The Management of a Large School Heating and Ventilating Plant

Constructive Suggestions Prepared by J. M. Robb, Heating and Ventilating Engineer, Peoria, Ill.

Editor's Note. The planning and construction of an efficient and economic school building with a genuinely economical heating and ventilating plant is an achievement for any school architect and ventilating engineer. It is similarly an achievement for a janitor-engineer to operate such a building, and particularly such a heating and ventilating plant, so that it renders the most satisfactory and economical service over a long period of years.

The material which follows has been prepared by a successful heating and ventilating engineer who is somewhat of an educational philosopher and who, at the same time, has a thorough appreciation of the human as well as the mechanical difficulties of operating a large school-building plant.

With a few minor changes, the 150 or more paragraphs which follow, were originally addressed to the janitor-engineer of the Stamford High School at Stamford, Conn. In reality the paper is a discussion of many fundamental problems of school-plant operation with which every school-board member and superintendent should be acquainted. The paper is packed full of valuable hints, suggestions, and shrewd observations. The style is unique in that it sets out every essential point in a separate numbered paragraph.

Importance of Caring for the School Plant

1. The man who fills the position of janitor-engineer in a large high school, like the Stamford High School, has as rare an opportunity to show power and capacity to apply it as any man could wish.

2. To maintain a school building clean and sanitary as well as comfortable, and to set an example of respect for property, that the faithful discharge of his duties must be, makes the janitor-engineer one of the most important single factors in the educational processes of the building.

3. But to accomplish this result he must practically apply the definition of an executive as "one who never does what he can delegate, yet is always busy." In short, he must be the brains of the school-building maintenance organization, requiring it to do what he sees that must be done.

4. The fable of the man who passed through a forest without seeing any trees, unfortunately applies to many educators, and to most men in charge of buildings like this.

5. A five-minute inspection of any school building will show whether the man responsible for it is alive to his responsibilities, or dead on his feet. Brainwork always shows in the final result.

6. Vision is the origin of all accomplishment. If any individual can so clearly picture in his mind any desirable result, that he instinctively acts up to it, as an actor portrays a character, its materialization will be as certain as the operation of the law of gravity.

7. It is the purpose of these notes to assist the making of such a mental picture of a clean, sanitary, comfortable, and economical school building.

The Janitor-Engineer's First Job

8. Two things must be accepted at the outset. Human nature being what it is, there is no hope to ever satisfy everyone in such a large organization as the Stamford High School. There always will be criticism and plenty of it. Less than ten per cent of the human family can think. And even those who can think straight, feel before they think, and feel far more than they think. In this we pay the universal price for our common human nature.

9. So the first requisite in a job like this is the ability to act as a sort of human door-mat and yet be cheerful under the strain. The ability to carry on cheerfully under unfair criticism is as rare as it is valuable. And it is particularly important in school work.

10. Most educators seem to be as temperamental as grand-opera artists. They all mean well. But many of them never realize what crosses they can be to those who must serve them.

11. An understanding of this fact will make the man in the maintenance job a sort of human flywheel. He will absorb all of the driving pushes of the small powered units that are found inevitably in every large organization. By letting them relieve their feelings to him he will help them in their own work. And by absorbing their irritation into his own power, he will help his superiors to make the whole machine function more effectively.

12. So the first requisite for success is a sympathetic understanding of the frailties of our common human nature, and enough capacity to absorb all the outbursts of small people who, like tin teakettles, boil over with the least application of heat.

Cooperation the Second Requirement

13. The second requirement is a realization of the necessity for cooperation from the students. Unless the students can be induced to discipline themselves in the care of the building and its equipment, particularly in their treatment of floors, lockers, toilet fixtures, and univents, no army of trained cleaners and maintenance people can perform the work to keep the building clean and sanitary, and the equipment in its original condition. This will be considered later.

14. All human effort is an attempt to draw straight lines, it being accepted that a straight line is the shortest distance between any two points. This applies to school-building maintenance as certainly as to any other effort. And its first practical application comes in a realization that the job is a constant battle against dirt, and that one human being can perform only so many motions, and cover only so much space in any given unit of time.

15. Efficiency is only finding the shortest, quickest, and best way to do anything, and then to do that particular thing always in that particular way as certainly as the sun rises and sets.

The Custodian as Teacher

16. So the man in this job of school-building maintenance must realize first of all that cleaning is an art which must be taught like any other art. And further, until he learns the art himself, he cannot teach it to others.

17. Therefore, he must first learn to perform every item of operation himself until he is certain of the exact way to best do it. Only then will he be in position to teach his assistants how to do it, and only then will he know when they have performed properly.

18. It will help in the endless battle against dirt to realize that dirt is only matter which is out of place. And, to keep a building and its equipment clean, is realizing and applying the fact that order is the first law of God.

19. The conclusion is inevitable then that the whole job of maintaining a schoolhouse is just to make a time and a place for everything, and then *see* that everything is done in its particular time and kept in its especial place.

20. The man who can do that in the Stamford High School will make a record that will draw the attention of the school world.

A Custodian's Orders and Permanent Records

21. One of the first requisites in a job like this is a supply of printed sheets, no larger than 8 by 11 in., one for each floor, with the plan of the building drawn to scale, and each room and other space bearing an identifying number.

22. Then, if every item of equipment such as radiators, univents, fans, motors, and even including desks, chairs, and tables, will also be permanently marked with an inventory number, it will be easy and inexpensive to run a system of permanent records that will save time and money.

23. If work-order sheets are provided, the floor diagrams can well be printed upon the backs. Then if all orders bear the proper inventory number and if they were filed under that number, there will be a permanent record of every operation. No writing will be necessary except the original memo, and the report of the individual who performed the requirement of the order.

24. If the orders are made in duplicate, the carbon copies will serve as checks against uncompleted jobs. And they may be used further as cost records, or as the basis for annual reports, or as a cross index, or as a log of daily performance.

25. By applying this principle throughout, an orderly routine will be established that will enable the chief janitor-engineer to continually keep the whole operation in his mind, as well as to apply his attention where it is most needed.

Cleaning Floors

26. In cleaning corridor and gymnasium floors, the floor mop, with a cross piece nearly four feet long and oiled strands three feet long seems to clean as effectively as a vacuum cleaner. Smaller mops serve for schoolrooms. These mops must be steamed frequently, then dried and re-oiled. But they seem to keep the floors in the most perfect condition. The proper oil must be used. (Information on the proper oil to use may be had from J. J. Ball, Engineer, Board of Education, Denver, Colo.)

27. It is recommended that the "white handkerchief test" of lighthouse inspectors be used as a check upon the cleaners.

28. And it is further recommended that consideration be given to the use of white uniforms for the whole force, including the boiler firemen.

Cleanliness Necessary in Ventilation

29. In the maintenance of the entire building and all its equipment, over 90 per cent of successful achievement lies in the ability to keep it permanently clean. The effort is constant warfare against dirt.

30. This applies particularly to the univents. If they are not kept as clean as kitchen equipment, the purpose of their installation will be defeated.

31. Cleanliness in all equipment that handles air to be breathed, is as vitally important as it is in handling food and drinking water.

32. In fact, the problem of properly ventilating a schoolroom is identical with the problem of maintaining the contents of a crowded swimming pool potable.

33. The successful solution of the ventilation problem means more to the health of the occupants of a school building than adequate food and pure drinking water.

34. The soft whirring sound of the air delivered by the univent has annoyed a few teachers until they have obtained a true understanding of its benefits.

35. This sound is due to the rush of air necessary to make it spread over the entire classroom ceiling. The hard construction of schoolroom walls sometimes amplifies this sound in a way that everyone who has studied acoustics appreciates.

36. But as no teacher would be annoyed by the soughing of breezes in the pine trees, if she were teaching in a pine grove, so she thinks of nothing but its benefits when she understands what the soft air whir means to the health of her pupils and herself.

37. It is necessary, however, to explain the functions of the unit ventilators to the teachers, as they occupy the building. And this service should be performed for each new teacher who comes to the building.

38. Dr. Harry Burns, hygienist of the Pittsburgh, Pa., board of education, says that more teacher and pupils in our schools are starved by the lack of adequate air than by impure water, or improper or inadequate food, and that the unit ventilator is the best remedy for this condition he has been able to discover.

The Heating and Ventilating Problem

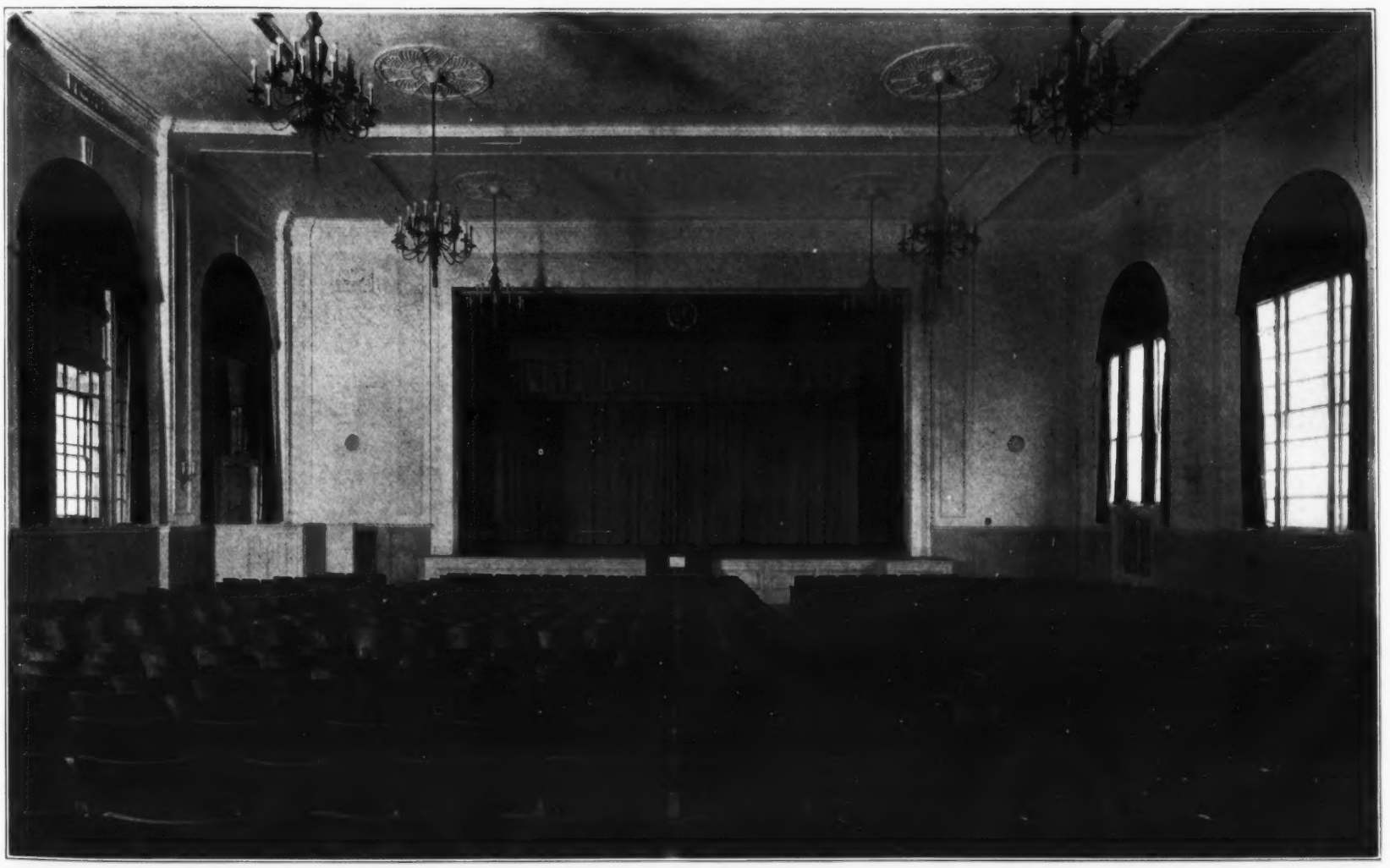
39. It is important that the chief engineer understand the distinction between heating a schoolhouse and ventilating it. If he had the problem of maintaining potable and warm the contents of a crowded swimming pool, he would immediately recognize two separate problems.

40. To keep the water at the right temperature simply means comfort for the swimmers, while the problem of keeping the water pure enough to drink means infinitely more. To maintain both conditions means to keep the swimmers in the best and most vigorous state of health.

41. What makes all the confusion in ventilation today is that comfort based on proper temperature, and health considerations based on the quality of

(Continued on Page 152)

FRONT VIEW.
STAMFORD HIGH SCHOOL, STAMFORD, CONN.
Knappe and Morris, Architects, New York, N. Y.



AUDITORIUM, LOOKING TOWARD STAGE.
STAMFORD HIGH SCHOOL, STAMFORD, CONN.
Knappe and Morris, Architects, New York, N. Y.

The Stamford High School, Stamford, Conn.

The new high school at Stamford, Conn., is located on a commanding site, affording every advantage for light, air, and comparative quietness. The plot contains approximately fourteen acres of ground and offers unusual opportunities for future development of the physical side of high-school life, with adequate space for community playground purposes and competitive sports. The construction of the building was begun in February, 1927, and the plant was completed and occupied in September, 1928.

The building is 363 ft. long and 218 ft. deep and contains accommodations for from 2,300 to 2,500 students. Due to the character of the site, the building is two stories high in the front and six stories high in the rear. The boiler room is partly below the level of the ground, while the gymnasium and cafeteria are at ground level.

The building is built in the colonial style of architecture. It is constructed of brick, with lime-stone trimming, and is fireproof throughout. The front elevation is surmounted by a fine clock tower.

At the right of the main entrance are located the administrative offices, comprising the offices for the principal, the assistant principal, and the clerks. Here also are found the vault for the school records and supplies, the main telephone switchboard, and the master clock for controlling the clocks and program signals in all parts of the building. Adjoining the offices are the school clinic and emergency room, and a room for teachers' conferences. On this floor are also located the commercial department with rooms for bookkeeping and typewriting, and two large rooms for music. In the northwest portion of the building is a small auditorium seating 200 persons and provided with a small stage. This room may be used for small assemblies which do not require the use of the large auditorium.

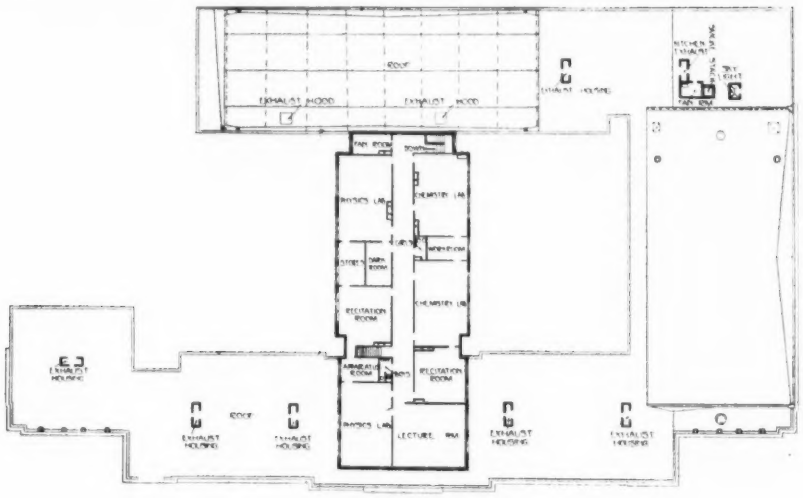
In the south end of the building is the main auditorium with balcony, with a seating capacity of 1,600. The room is so arranged that it may be cut off from the rest of the building by the use of folding gates in the corridor. Three large doors lead directly from the vestibule into the auditorium proper. At the left of the lobby is a coat-room, and at the right is a ladies' waiting room. On the other side of the stage is a dressing room. A motion picture booth is located in the balcony at the rear of the room. At the side of the stage is the radio room, with loud speakers in the auditorium, the gymnasium, and the cafeteria, making its use adaptable to practically all rooms in the building. The seating of the auditorium is of the opera-chair type in appropriate design and color; the stage curtains and window draperies, together with the color of the walls and trimming, combine to produce a most attractive and harmonious appearance. The acoustics of the room which are usually fine, have received careful attention through the application of acoustical treatment to the entire ceiling.

On the second floor, over the central entrance, is a large library, with shelves for 5,000 volumes and appropriate library equipment. At the end of the room is a librarian's workroom for cataloging and repair work. Two biology laboratories are also located on this floor.

On the third floor are the physics and chemistry laboratories, a lecture room, two recitation rooms, and the supply and preparation rooms. The domestic science suite consists of two sewing rooms, a double-size cooking room, a demonstration dining room, and storage and preparation rooms for the instructors.

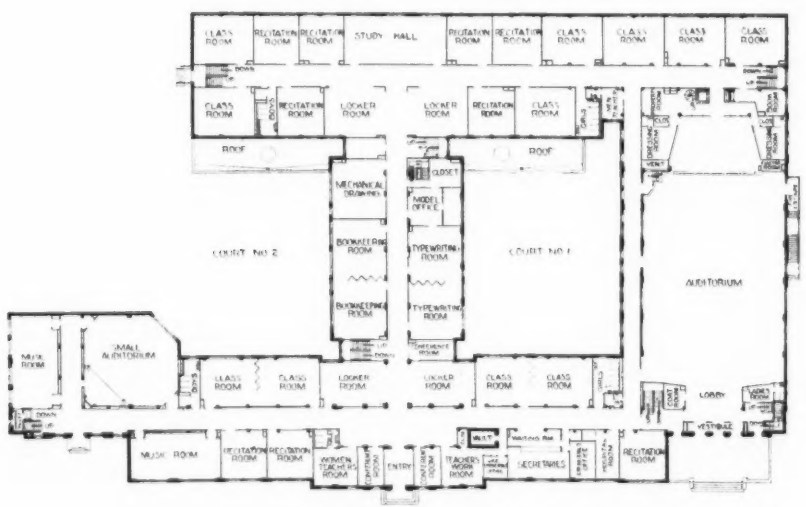
A cafeteria is provided in the basement space, with seating facilities for 600 persons at one time. Adjoining the cafeteria is the kitchen, with complete cooking and refrigerating equipment. Across the corridor from the pupils' room

REAR VIEW, STAMFORD HIGH SCHOOL, STAMFORD, CONN.
Knappe and Morris, Architects, New York, N. Y.

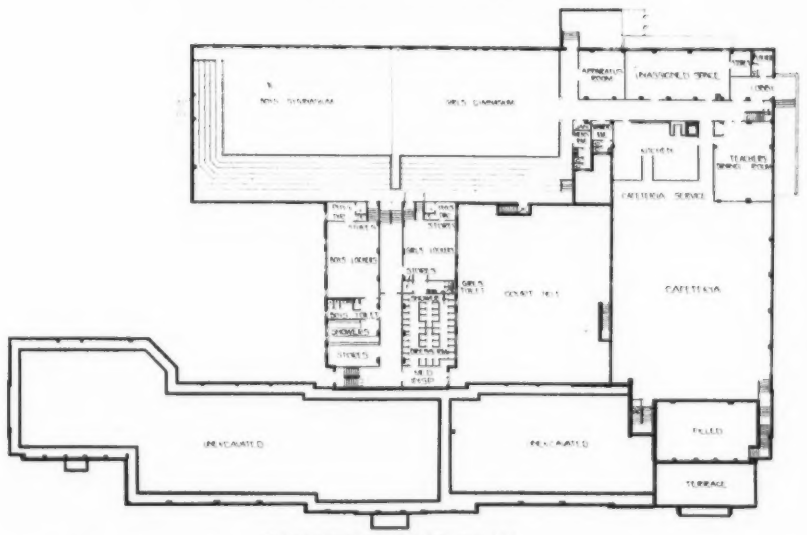


THIRD FLOOR PLAN

SECOND FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT FLOOR PLAN

STAMFORD HIGH SCHOOL, STAMFORD, CONN.
Knappe and Morris, Architects, New York, N. Y.

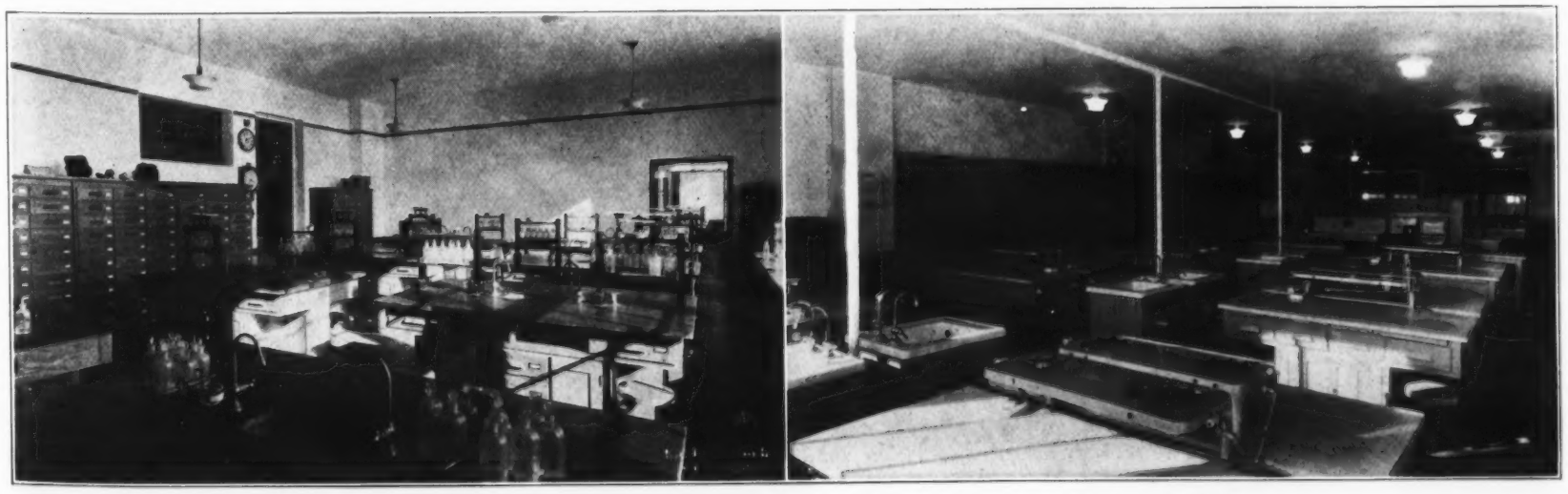
GYMNASIUM, STAMFORD HIGH SCHOOL, STAMFORD, CONN.
Knappe and Morris, Architects, New York, N. Y.

is the teachers' cafeteria with a capacity of 75 persons. Here also is located a large gymnasium, which may be divided by folding doors into two gymnasiums, one for boys and one for girls. Space is also provided for locker, shower, and dressing rooms and for instructors' rooms. The spectators' gallery provides seats for 600 persons.

At the north end of the gymnasium and open both to the upper floors and to the outside is located a large locker room. In addition to this room, there are ten such rooms in different parts of the building containing nearly 200 lockers each for the storage of pupils' books and street clothing. Each locker is provided with a key and each locker room may be locked by the teacher during the school session, affording double protection to the property of the pupils.

Numerous toilet rooms, restrooms for teachers, and storage rooms for books and supplies are distributed throughout the building, together with a number of small rooms for conferences of teachers. An electric elevator is provided for the distribution of books and supplies. It connects with the receiving room in the basement where all supplies are delivered from the trucks. A feature of the building is the unusual propor-

CAFETERIA, STAMFORD HIGH SCHOOL, STAMFORD, CONN.



CHEMISTRY LABORATORY COOKING ROOM
INTERIOR VIEWS OF THE STAMFORD HIGH SCHOOL, STAMFORD, CONN.
Knappe and Morris, Architects, New York, N. Y.

LIBRARY, STAMFORD HIGH SCHOOL, STAMFORD, CONN.
Knappe and Morris, Architects, New York, N. Y.

tion of direct light for each room, which is made possible through the provision of two large light courts.

In the sub-basement are located the heating plant, consisting of four large boilers, the coal bins with a capacity of 1,200 tons of coal, and the equipment for heating the water required for toilet rooms, showers, and cafeteria. A special metal waste chute is provided for the collection and disposition of waste paper from the different rooms. The heating of the building is accomplished by four distinct mains, each with its own control valves, thus making it possible to hear any of the four units independently of the others. Fresh air is supplied to each room in the building through mechanical heating units, electrically controlled and located in the outside walls. Each unit is controlled by a thermostat, placed in the room, as well as by a central control switchboard located in the boiler room.

The building was planned and erected under the direction of Messrs. Knappe & Morris, of New York City, and cost a total of $1,078,255.

Construction Data

Date contract awarded	Jan. 27, 1927
Date construction started	Feb. 1, 1927
Date building occupied	Sept. 10, 1928

Site

Dimensions	363 ft. by 218 ft.
Principal frontage	500 ft.

Building

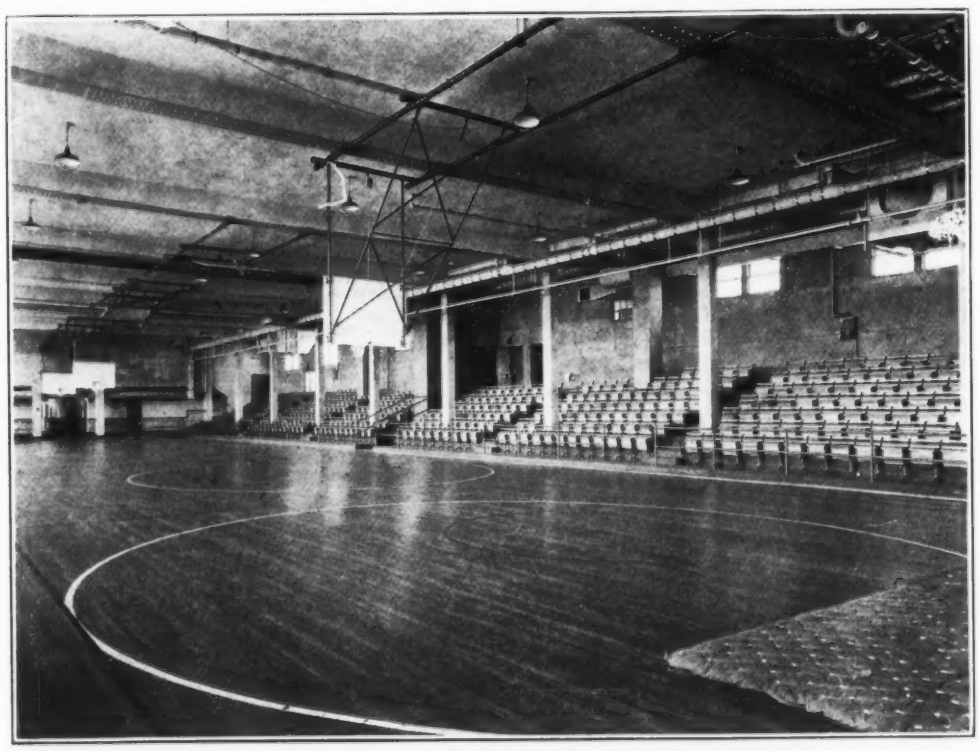
Use	Senior high school
Number of classrooms	85
Commercial department	6
Conservatory	1
Library reading room	1
Librarian's workroom	1
Study rooms	8
Commercial art	6
Fine arts	2
Public speaking	1
Music room	2
Offices	8
Book storage	3
Clinic	1
Girls' restroom	1
Teachers' rooms	5
Auditorium	154 ft. by 66 ft. 6 in.
Seating capacity	1,600
Gymnasium	172 ft. by 72 ft. 6 in.
Seating capacity	600

Design and Construction Materials

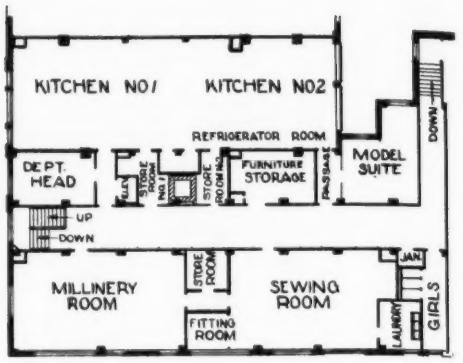
Exterior design	Georgian colonial
Exterior facing	Brick and limestone trimming
Construction material	Reenforced concrete
Corridor and stair finish	Rubberstone and carborundum treads
Classroom finish	Plastered walls, artstone wainscot, and wood trimming
Auditorium finish	Ornamental plaster, wood trimming, and acoustical treatment
Gymnasium finish	Artstone wainscot and plastering, and wood trimming
Finish of toilet rooms	Tile wainscot and marble partitions

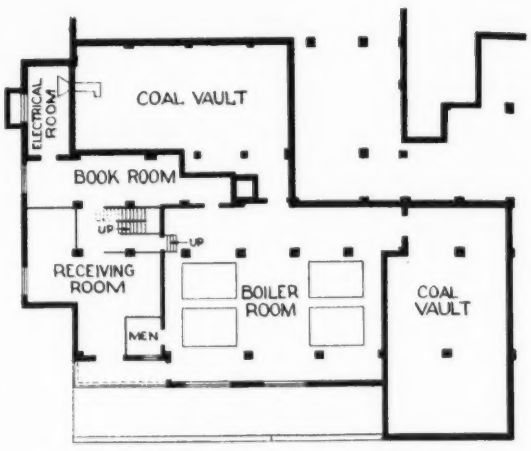
Mechanical Equipment

Type of heating and ventilation	Vapor system with univent machines
Temperature control	Automatic
Electrical equipment	Complete
Plumbing	Brass piping and sanitary fixtures



GYMNASIUM, STAMFORD HIGH SCHOOL, STAMFORD, CONN.





HOUSEHOLD ARTS DEPARTMENT AND BOILER ROOM, STAMFORD HIGH SCHOOL, STAMFORD, CONN.

Cost and Pupil Capacity

Cost of building	$1,078,255
Pupil capacity of building	2,300 to 2,500
Cost of equipment	$210,634
Total cost	$1,288,889
Cost per cubic foot	37.75 cents
Cost per pupil	$43.13
Total cost per pupil	$51.55

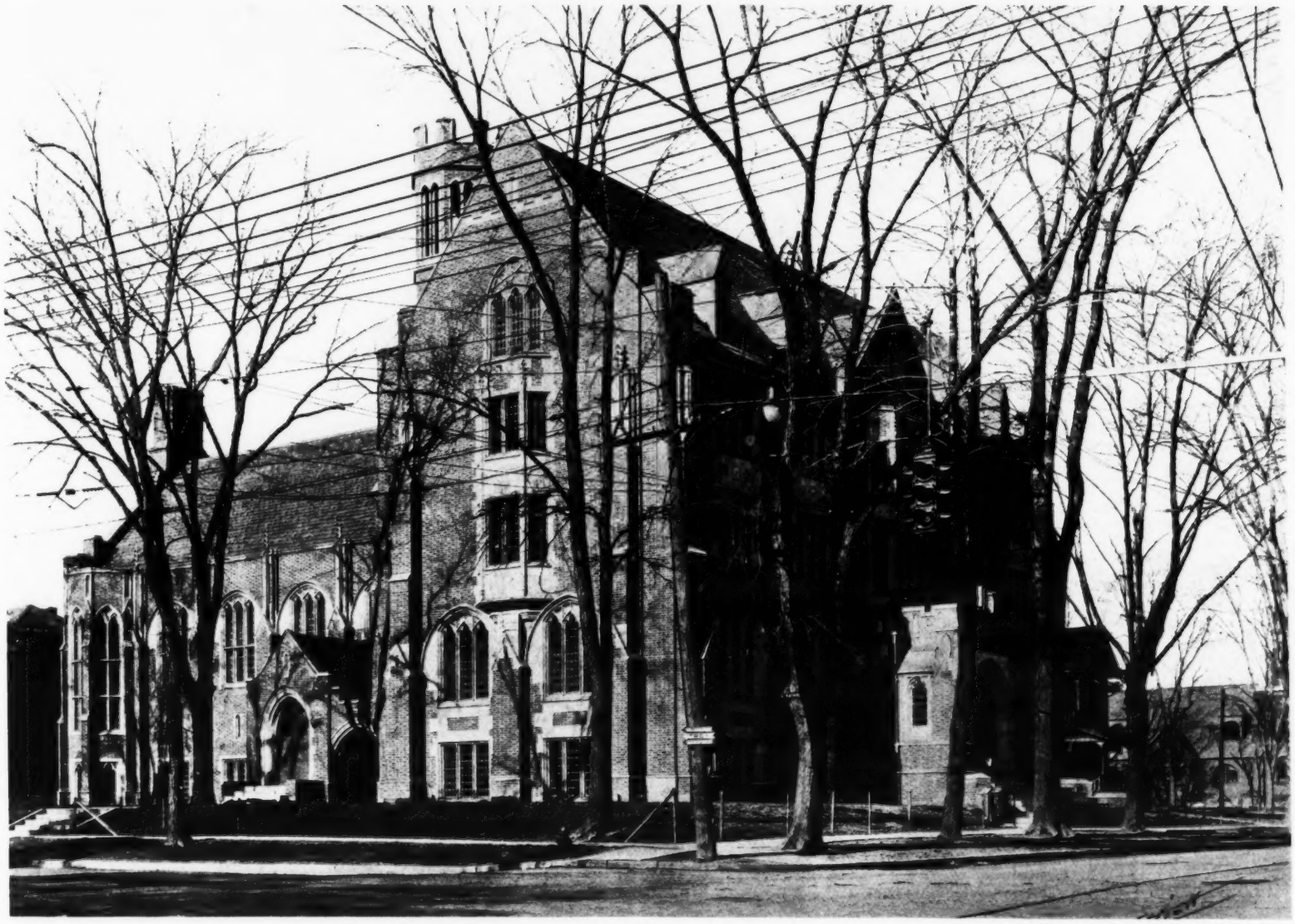
THE NEW ELMIRA COLLEGE LIBRARY BUILDING AT ELMIRA, N. Y.

The Elmira College Library Building which is the gift of the friends, alumni, and students of Elmira College, is located on a fine site, commanding a good view of the campus from every approach. The building is 115 ft. long by 82 ft. wide and is four stories high.

The building is designed in the English Collegiate Gothic style, which harmonizes well with the surrounding buildings already in existence. A slender tower rising from the library harmonizes well with the turrets and towers of the Cowles Hall in the vicinity.

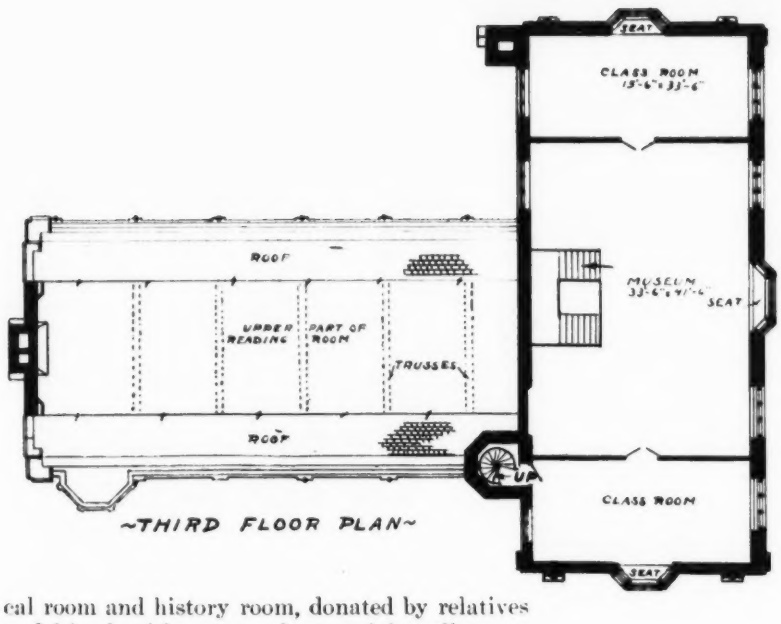
The exterior of the building is of eastern waterstruck brick, laid in Flemish bond, with Indiana limestone trimming. The building is entirely fireproof and the floors are covered with cork carpet which makes them soundproof. Attractive casement windows of English design have been installed.

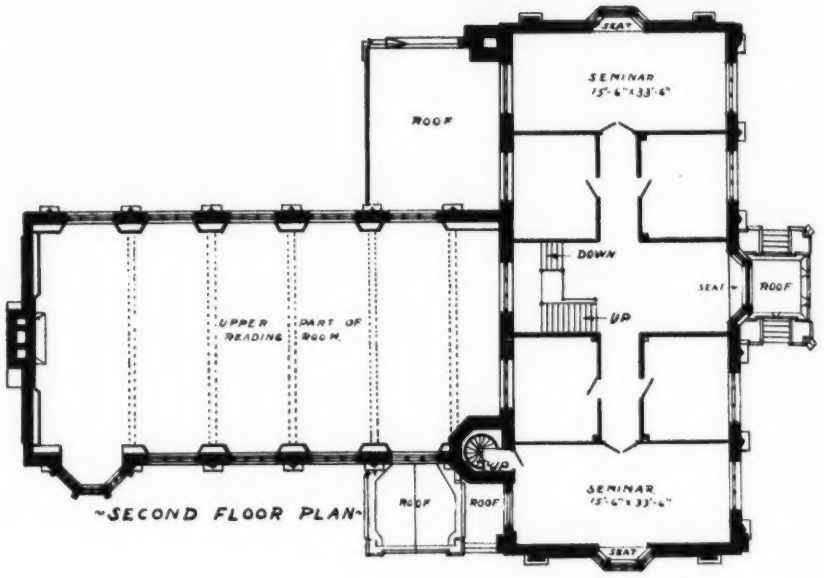
On the first floor is the J. S. Fassett Memorial Reading Room, 75 ft. by 39 ft., with walls open to the roof and timbered in hand-carved oak. The furniture harmonizes well with the woodwork, while the well-arranged windows and softly shaded table lamps provide ideal lighting. A fireplace at the end of the room gives the room a homelike appearance. A window set at one end of the room offers a favorite nook for quiet reading and study. The room was finished and furnished by Mrs. J. S. Sloat, in memory of her husband, and contains a large collection of rare books on a variety of subjects, which were bequeathed to the library. On this floor also are the librarian's office and cataloging room, the charging desk, stacks, reference rooms, periodical room, and history room. At the right of the main entrance is an attractive dressing room. There are a number of memorial stacks in the periodi-



ELMIRA COLLEGE LIBRARY, ELMIRA, N. Y.

MAIN READING ROOM, ELMIRA COLLEGE LIBRARY, ELMIRA, N. Y.
Coolidge, Shepley, Bulfinch, and Abbott, Architects, Boston, Mass., and Pierce and Bickford, Associate Architects, Elmira, N. Y.





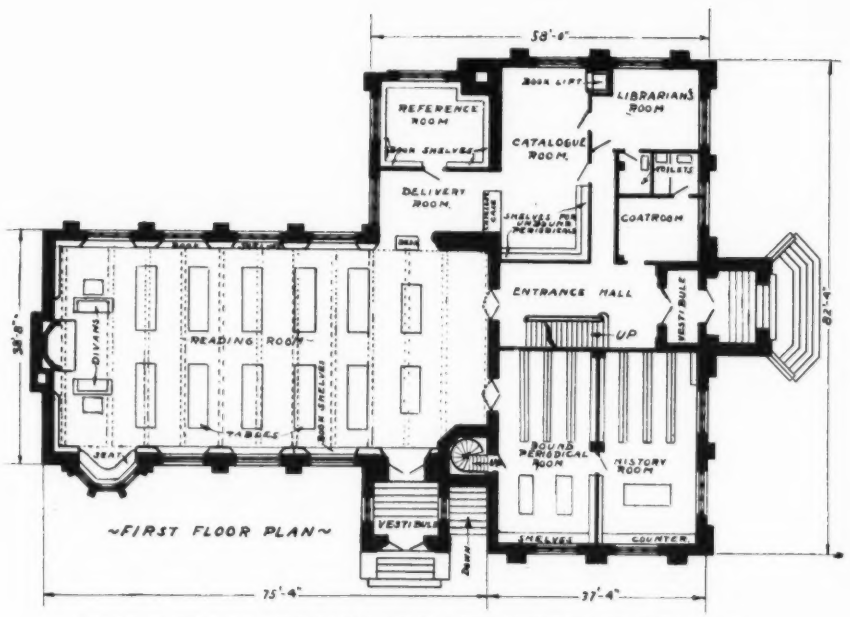
cal room and history room, donated by relatives and friends of former graduates of the college.

Other memorials are located in the seminar rooms, several of which are located on the second floor in the English literature, English, classical, and philosophy rooms. On this floor also there is a room reserved for the Farrar collection of 25,000 lantern slides with dark room for finishing. This collection was presented to the college by the friends and pupils of one of the former professors at the college.

The ground-floor entrance opens into a large study hall and reading room for town students. One of the attractive features of this room is the Ford memorial fireplace, which is a gift of the friends and admirers of Lena Ford, a graduate with the class of 1887 and author of "keep the home fires burning." Adjoining the students' study hall is a kitchenette and lunchroom, with cloakroom and locker. There are also on this floor a receiving room for incoming books and an additional stackroom. The romance language room, which is also a memorial, is located on this floor.

On the top floor of the library is a spacious hall, with a carved-timber ceiling of southern pine. There are three handsome windows all provided through class gifts or memorials.

The building was planned and erected under the supervision of Messrs. Coolidge, Shepley, Bulfinch & Abbott, of Boston, and Messrs. Pierce & Bickford, associate architects of Elmira.



FLOOR PLANS OF THE ELMIRA COLLEGE LIBRARY, ELMIRA, N. Y.
Coolidge, Shepley, Bulfinch, and Abbott, Architects, Boston, Mass., and Pierce and Bickford, Associate Architects, Elmira, N. Y.

THE PLAINVILLE HIGH SCHOOL, PLAINVILLE, CONN.

Lewis S. Mills, Secretary, Plainville School-Building Committee

The high school at Plainville, Conn., is located on a nine-acre site of almost level land, 1,000 ft. long and 400 ft. wide, affording ample space for outdoor school gatherings, for baseball and football games, for May-day assemblies, and for school and community field days. The field is used during vacations for aviation purposes.

The building is so arranged that there is a gradual rise of 4 ft. throughout the length of the 100-ft. walk leading from the street to the front entrance. The structure is built in the form of one half of the letter I, facing the west, and stands back well from the street, with a driveway on either side and around the building. It is 160 ft. long, 112 ft. through the center; and the wings are 78 ft. in width. The arrangement and the various space units as laid out, meet every necessary teaching and administrative requirement, and allow 62.5 per cent of the floor space to be used for instruction purposes. On the whole, this is an unusually high percentage for instruction purposes, compared with the average for buildings throughout the country.

The exterior construction is tapestry brick in variegated colors, with 18-in. concrete foundation walls, and cast-stone trimming. All interior walls are of brick or tile, with fireproof corridors and stairwells.

The lobby of the building leads to two flights of stairs, one to the right and one to the left, from the ground floor to the first or main floor, with a slight ramp to the main corridor of the ground-floor level. The arrangement provides a building of three stories at the cost of a two-story building.

On the ground floor there is a sewing department, with fitting room, storeroom and display cabinet, a cafeteria with a seating capacity of 100, a kitchen with a cooking room to accommodate a class of 24 pupils, a general workroom for experimental and practical work in carpentry, electricity, printing, sheetmetal work, together with rooms for the directors of boys' and girls' health programs. Lockers, showers, and toilets for boys and girls are also located on this floor.

The gymnasium-floor level is 8 ft. below the ground-floor level. Between the main corridor of the ground floor and the gymnasium are community windows, designed and contributed by the seven representative organizations of the community.

The gymnasium is 41 ft. by 66 ft., with a ceiling 18 ft. 6 in. above the floor. There are eight windows on each of the three sides, affording ample light and ventilation. Two exits leading to the outside are located near the rear of the gymnasium. The gymnasium is provided with bleacher seats on either side, with accommodations for at least 250 spectators.

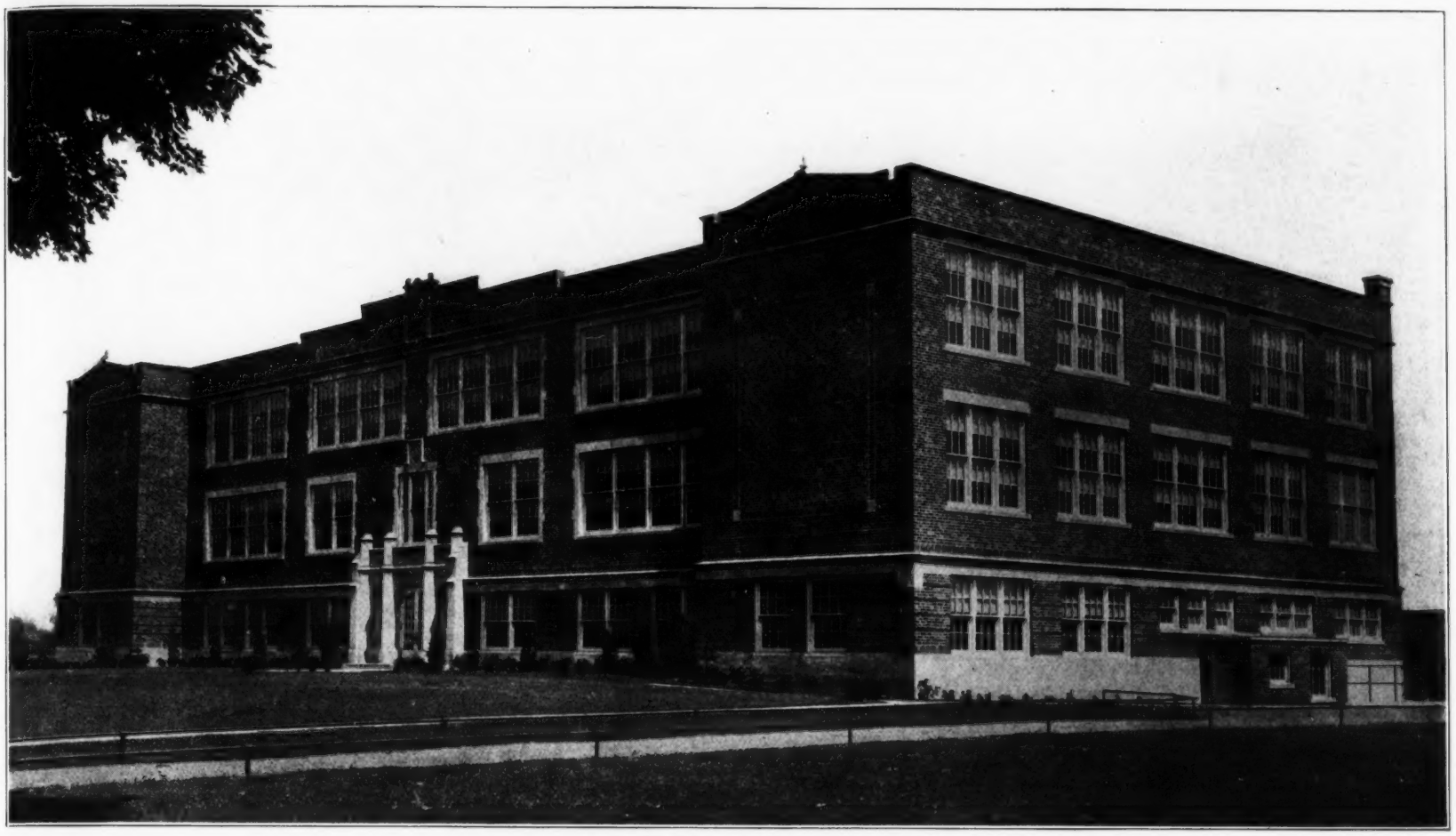
The fuel room, which is under the north wing on this floor provides space for 200 tons of coal. A boiler room with separate outside entrance is adjacent to the fuel room, and an ash hoist has been installed for the removal of ashes. Under the north-wing corridor are the physical director's room for girls, and the janitor's workroom. Large closets have been placed under the stairs for storage purposes.

In the west end of the gymnasium, under the ground-floor corridor is the gymnasium corridor 12 ft. wide and 50 ft. long. Directly off from this corridor, under the front entrance, is the room for gas, water, and electric meters and the battery connected with the clock system. The corridor is ample for serving refreshments at all social affairs held in the school.

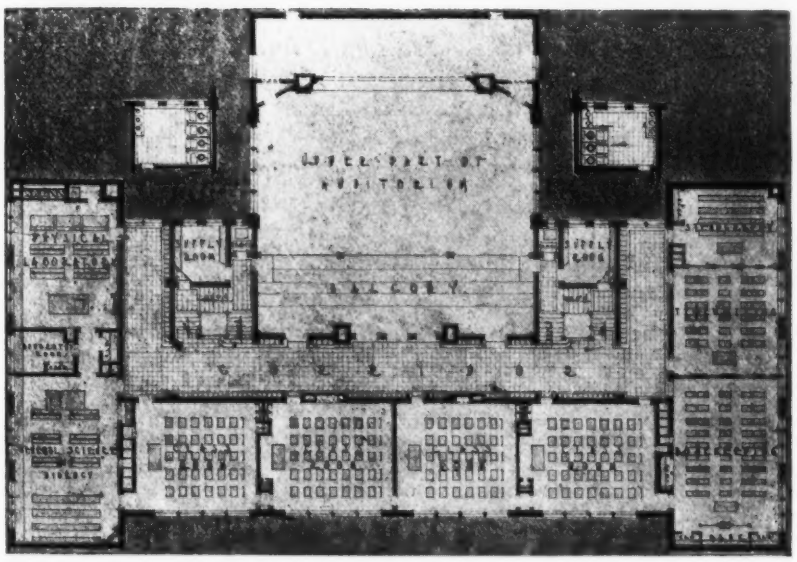
Under the south wing is a receiving room, 22 ft. by 34 ft., for receiving books and supplies. Under the rear corridor are the physical director's room for boys, and the packing and general storerooms for supplies. This latter room in its arrangement and equipment is suitable for use as a boys' clubroom, and with its separate entrance may be cut off from the remainder of the building.

On the first floor is the study hall, which is provided with a sliding blackboard panel-partition so that it may be enlarged whenever more room is needed. Opening from the study hall is a room 22 ft. by 34 ft., which may be used as a library and reading room. Between the library and reading room and the study hall there is a glass partition with counter, for receiving and distributing books.

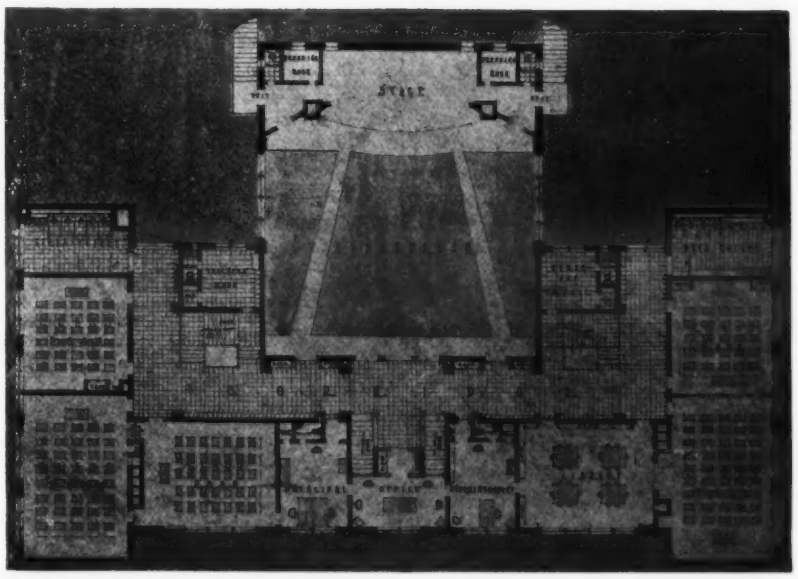
At the right of the stairs, on the first floor, is the office of the superintendent, and on the left is the office of the principal. In addition, there are a teachers' room, a health room for the use of the school doctor and nurse, a room for free-



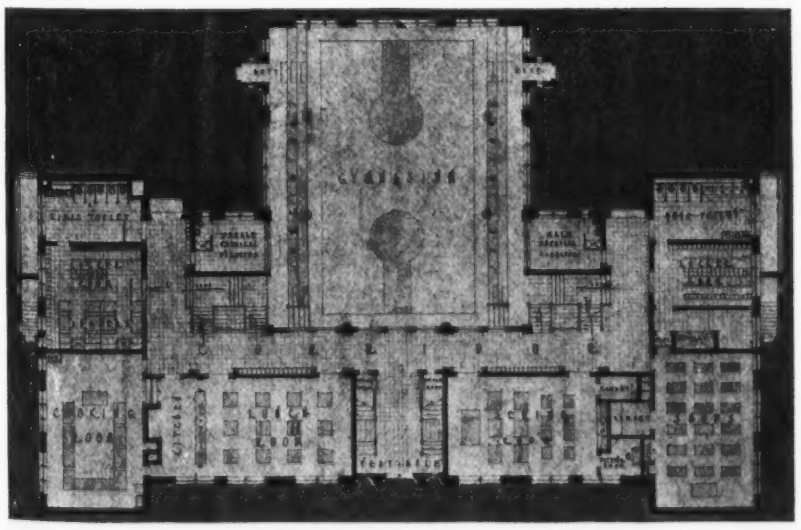
PLAINVILLE HIGH SCHOOL, PLAINVILLE, CONN.
William Thomas Towner, Architect, Middletown, Conn.



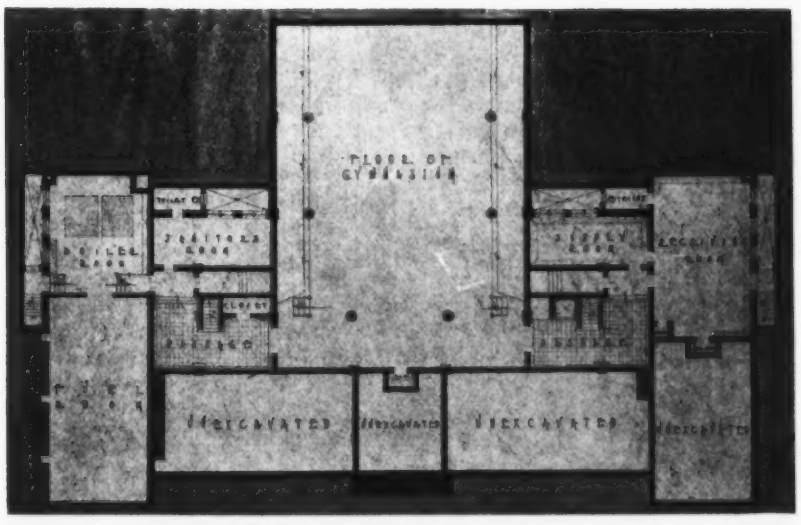
SECOND FLOOR PLAN



FIRST FLOOR PLAN

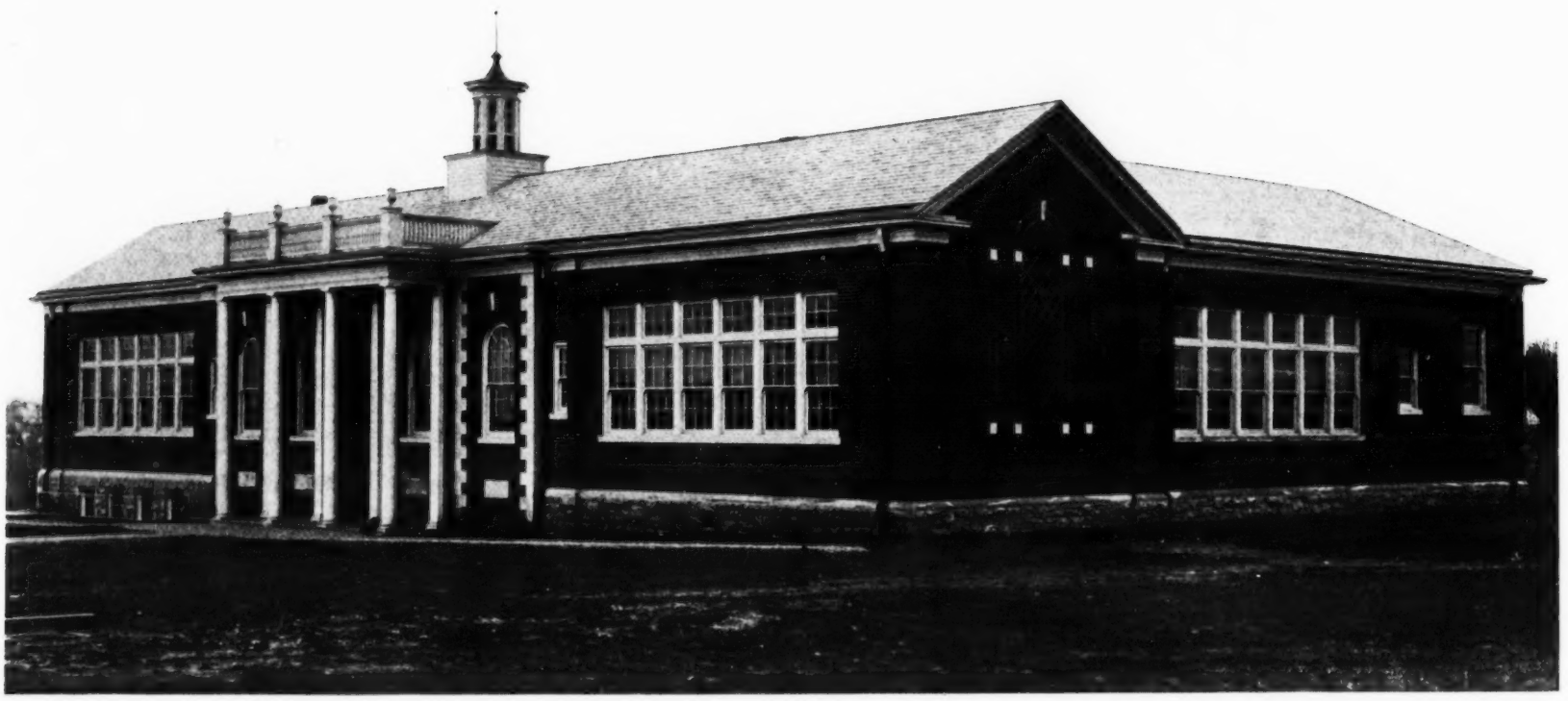


GROUND FLOOR PLAN



BASEMENT FLOOR PLAN

FLOOR PLANS OF THE PLAINVILLE HIGH SCHOOL, PLAINVILLE, CONN.
William Thomas Towner, Architect, Middletown, Conn.



CONSOLIDATED SCHOOL, ATHENS, KY.
H. A. Churchill and John T. Gillig, Architects, Lexington, Ky.

hand and mechanical drawing and art work, two classrooms, and toilet rooms for boys and girls. The general office of the school is located above the front entrance of the building. In this room are the master clock and the main telephone system. The entrance to the auditorium from the main hall is also on this floor.

On the second floor, the entire front of the building has been devoted to four classrooms. In the south wing are three rooms for the commercial department, comprising a bookkeeping room, a typewriting room, and a business-practice room. In the north wing are two large science rooms, one for physics and chemistry, and the other for general science and biology. There is also a smaller room for storage and experimental purposes.

On this floor are also located the balcony of the auditorium and the motion-picture booth. Opening from the north stairwell is a mezzanine room, over the teachers' room, which is intended for storage purposes for the principal, and on the end near the stairwell is a second room for the use of the superintendent. Near these are the closets for the janitor, for the storing of brushes and supplies, and the sinks for the janitorial department. Toilets for boys and girls are located in the wings on this floor.

The stairwells are located at each rear corner of the auditorium in the main corridor, and are well lighted and entirely fireproof in construction. There are five exits from the gymnasium and five from the auditorium.

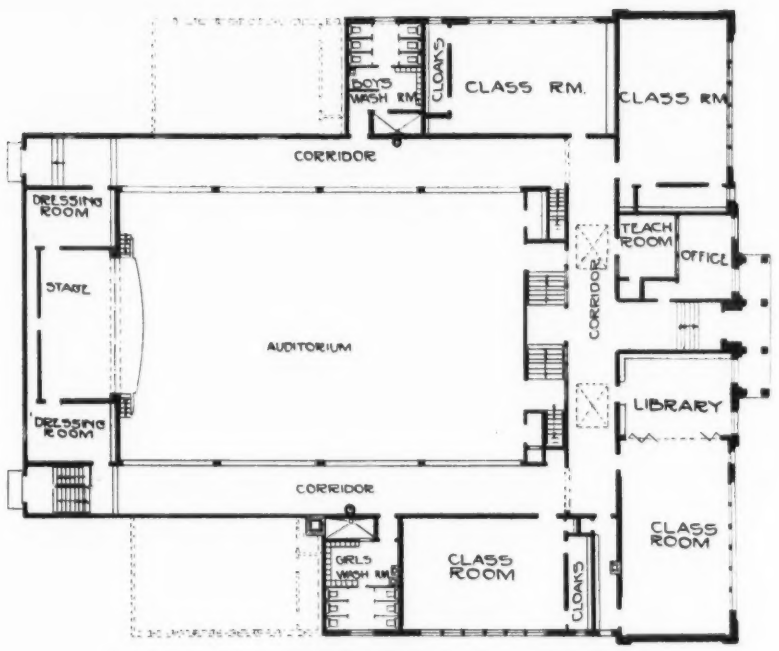
All classrooms in the building have beech floors, while the corridor floors are cement, covered with battleship linoleum.

The building has been so planned that additions may be built at any time without interfering with the arrangement of the present building, or destroying the beauty of the architecture.

The building was planned and erected under the supervision of Mr. William T. Towner, Middletown, Conn., and cost a total of $200,000 for building and equipment.

THE ATHENS CONSOLIDATED SCHOOL AT ATHENS, KY.

The Athens Consolidated Rural School at Athens, Kentucky, was begun in November, 1927, and was completed and occupied in September, 1928. It is a typical rural consolidated school and houses 170 pupils.



FLOOR PLAN, CONSOLIDATED SCHOOL, ATHENS, KY.
H. A. Churchill and John T. Gillig, Architects, Lexington, Ky.

The building measures 400 ft. by 600 ft., with a frontage of 400 ft. The architectural style is a colonial adaptation. The exterior walls are of a good grade of brick, with stone trimming and wood cornices. The basement and exterior walls are of masonry, and the floors are of wood. The corridors and stairs are of wood and the classrooms have steel windows and doors, and blackboard trim. The auditorium-gymnasium has exposed trusses, with steel purlins and Portland cement wainscoting. The purlins are spaced 4 in. on the centers and 1¾ in. material is used for the deck.

From the portico, entrance is gained through a lobby to the corridor, which leads to the auditorium and to the classrooms. On the right of the entrance is the principal's office and on the left is the library. The building contains three classrooms, one study room, two laboratories, two book-storage rooms, a library, a restroom, and toilets for boys and girls.

The auditorium-gymnasium, which is a dual-purpose room, contains accommodations for 500 persons in the auditorium and 200 in the gymnasium section.

A vapor-steam heating system is used for heating the building. The electrical equipment consists of electric lights and an automatic electric pump for pumping the water for drinking purposes. The plumbing used is the Smith system of chemical toilets.

The building was erected at a cost of $45,000, including heating, plumbing, and electrical work. The cost per pupil was $265, and the cost per cubic foot was 15 cents.

The building was planned and erected under the supervision of Messrs. Churchill & Gillig, architects, of Lexington, Ky.

State Systems of Taxation for Public Schools

III. The Connecticut Plan

Fletcher Harper Swift, Professor of Education, University of California

Introduction

There is perhaps no more important or crucial question facing our states today with respect to the support of public schools than that which concerns the degree of responsibility which the state shall assume. Every great American statesman, from George Washington onward, has endeavored to impress upon the minds of the American people the impossibility of maintaining a stable democracy except on the basis of universal education. Nevertheless, the fact remains that elementary education in the United States has never been universal, has never been free, and that the quality of the education provided differs so widely, not only from state to state, but within the borders of almost everyone of our forty-eight states, as to constitute a social and political menace. In the year 1926, one tenth of the teachers in the State of Florida received an average annual salary of $300 or less, whereas the average annual salary in California, New York and New Jersey, was approximately $2,000[1] The same year, California, Wyoming and Nevada each expended over $120 on current expenses for each child and daily average attendance, whereas Arkansas and Georgia expended only $30 and Mississippi $28.[2]

A careful study of the factors involved cannot fail to lead to the conviction that these inequalities whatsoever for thousands upon thousands of children in the United States today, are the result of the almost universal practice of placing the major portion of the responsibility for the establishment, direction and support of public schools, in the hands of local as opposed to state authorities.

It is with no small degree of interest, therefore, that the student of school finance turns his attention to the practices of Connecticut, which was perhaps the first of our states to attempt to support her schools entirely from state-provided revenues. In the year 1795 Connecticut created her permanent school fund out of lands lying in the Ohio Western Reserve. There is reason to believe that from the very first the legislators who established this fund expected its income to pay in full the wages of common-school teachers and so relieve the towns and school societies almost entirely from the necessity of levying any local taxes for school purposes. The results of the Connecticut policy by which the responsibility of supporting schools was removed almost entirely from the minor civic divisions and thrown back upon the state, could not have been foreseen by those who inaugurated this policy. Nevertheless, the evils soon showed themselves, and the school fund of Connecticut became notorious as an example of a magnificent endowment bringing unlimited disaster upon the institutions it was designed to aid.

Of all the ills that followed the establishment of the Connecticut school fund, the most disastrous was its effect upon local taxation. The Connecticut school code of 1700, which had continued in force until 1778, had compelled every town to levy a local tax and maintain a school. The gradual increase of the income of school fund of 1775 was accompanied by an increasing disinclination to levy local taxes, with the result that from 1821 to 1854, local school taxes became virtually unknown in Connecticut, and her now pauperized system became a by-word throughout the land.

The lesson which Connecticut had learned at such a cost was not lost upon the other eastern states. New York in 1812, three years prior to the first distribution of the revenue of her permanent school fund, passed an act requiring that, in order to participate in the income of this fund, the local community must raise by tax an amount equal to its share of the state school fund. The example of New York was in general followed by the rest of the eastern states, with the result that from this time on it came to be commonly accepted that adequate support, civil, moral, and financial, for common schools, can only be secured through keeping them "close to the hearts of the people," a phrase increasingly interpreted to mean that the major portion of the responsibility for the administration and support of schools shall rest with the local authorities. Not only did this principle gain almost universal acceptance in early times, but throughout the last fifty years the relative importance of the state as the provider of school revenues has steadily decreased. The disastrous consequences of this policy and of the persistent worship of the fetich of local support and control are evident on every hand. It is with considerable interest, therefore, that we explain the present practices of Connecticut, whose early unfortunate policies were undoubtedly among the most important and effective factors in the creation of that unthinking hostility which still exists in the majority of our states towards any high degree of centralized support and control.

There are a number of other reasons in addition to those already cited why a study of the Connecticut plan of taxation for schools is worthy of attention. Few states offer more striking evidence of the truth of the statement, often made by the present writer, that in the future the bulk of state school aid must be derived from some form of taxation. The Connecticut school fund, once the source of all state aid, has now sunk to a position of such minor importance as a provider of revenue, that its income is no longer apportioned separately. On the contrary, the interest of this fund is transferred to the civil list (general state fund), where it is merged with the proceeds of state taxes and moneys derived from a considerable variety of other sources. As a result, in actual practice, Connecticut makes no distinction in granting moneys to public schools between funds derived from taxation and the interest of her school fund.[3]

In the year 1925-26, Connecticut expended, for elementary and secondary schools, $2,147,160.08 out of moneys appropriated from the civil list account.[4] In the same year, the income of the school fund contributed to the civil list fund $124,714.62, a sum[5] which constitutes only 5.7 per cent of $2,147,160.08, and less than one-half of one per cent (0.4%) of $29,610,677.14, the total state receipts from all sources.

Table I presents an analysis of Connecticut's total receipts for the year 1925-26, showing the amount and per cent available for all general appropriations, and the amount and per cent pledged in whole or in part to specific appropriations and therefore not available for general appropriations.

TABLE I
Analysis of Connecticut State Receipts, 1925-26[1]

Receipts	Amount	Per cent[2]
I. Available for all general appropriations		
From state taxes.....	$15,052,171.69	51
From miscellaneous sources	2,968,574.48	10
II. Available in part[3].....	11,589.930.97	39
	$29,610,677.14	100

[1]Connecticut State Comptroller, *Annual Report*, 1926, pp. 21-23.
[2]Computed.
[3]Pledged in whole or in part to specific appropriations, and to extent pledged, not available for general appropriations.

From Table I it will be seen that 61 per cent of the total moneys credited to the civil list account, and amounting to $18,020,746.17, is available for all general appropriations. Included among the miscellaneous sources which are available for all general appropriations are interest on funds, including the interest on the (state permanent) school fund; fees paid by corporations and individuals for services rendered or privileges granted by state officials and departments; together with moneys derived from a large variety of miscellaneous sources. State taxes furnished by far the major portion of the moneys available for all general appropriations, and may, therefore, be regarded as the chief sources of state school grants.

A question which has long vexed state legislators and those entrusted with the formulation of state financial policies, is whether school moneys shall be derived from the proceeds of state taxes on which the schools have a specific claim or from appropriations payable from the state general revenues. Three states at the present time, namely, New York, Ohio, and South Carolina, derive all state aid from appropriations. Connecticut belongs to a somewhat larger group in which, except for the income from state permanent school funds, all state school moneys are furnished by appropriations from the state general fund.[6]

From this preliminary consideration of some of the outstanding features of the Connecticut system of school support, attention may now be turned to the types of state taxes levied and the methods whereby the proceeds of such taxes are devoted to schools.

Types of Taxes Levied

General property tax. Instead of following the policy employed by most states, of levying a general property tax of a certain fixed millage, Connecticut provides for levying "an annual state tax of $1,500,000" upon the towns of the state. This annual tax is apportioned among the respective towns in the proportion which the total annual proceeds of direct taxation in each as averaged for the next three preceding fiscal years "is to the total revenue so determined for such time as averaged in all the towns in the State."[7]

Military or poll tax. The laws of Connecticut provide for the levying of an annual military or poll tax of $2 upon all persons between the ages

This is the third of a series of articles on state systems of public-school taxation to be contributed to the JOURNAL by Professor Swift. The first and second of these articles appeared in the March and April issues of the JOURNAL.

[1]See Florida State Superintendent of Public Instruction, *Biennial Report 1926*, pp. 300 to 301, and *U. S. Bureau of Education Bulletin, 1927*, No. 39, p. 19.
[2]*U. S. Bureau of Education Bulletin 1927*, No. 39, p. 39.

[3]*Connecticut State Treasurer Report, 1925*, p. 6
[4]Computed on basis of disbursements reported by Connecticut State Comptroller, *Annual Report, 1925*, pp. 78-85, and data furnished to author by Connecticut State Board of Education. *The Report of* (Connecticut) *Board of Education*, 1924-26, col. 14, Table II, p. 42, gives $1,457,871.64 as the grand total of state grants for education, but this total does not include state expenditures (1) for State Board of Education; (2) for vocational education.
[5]The total income for the year 1925-26 amounted to $165,747.83. From this total, the sum of $124,714.62 was transferred to the Civil List Account, leaving in the state Treasury a balance of $41,033.21. Connecticut State Treasurer, *Report*, 1926, p. 162. The principal was reported on June 30, 1926, as amounting to $2,052,427.79. *Ibid.*, p. 161.

[6]The 9 states included in this group are: California, Connecticut, Illinois, Maine, Mississippi, North Carolina, Pennsylvania, Rhode Island, and South Dakota.
[7]*Connecticut Public Acts*, 1923, pp. 3640-3641, ch. 218; Connecticut *General Statutes*, 1915, ch. 257; Connecticut Public Acts, 1927, pp. 4212-4213, ch. 120, sec. 1.

of 21 and 60 not specifically exempted by law. The proceeds of this tax are to be employed for state and town purposes.[8]

Inheritance tax. The state levies graduated inheritance or estate-transfer taxes upon such proportion of the net value of estates as is not specifically exempted by law. The rate levied varies from 1 to 8 per cent, depending upon the net value of the estate and upon the relationship of the individual, corporation, or association, to the grantor, donor, or decedent, and depending also upon whether the property is that of a resident or of a non-resident.

Tax on choses in action. "A tax at the rate of 4 mills upon the par value of any taxable intangible property, including choses in action, bonds and notes, may be paid to the state treasury for the use of the state, and all property so voluntarily declared is exempt from local taxation during the period for which such payment is made."[9] The term "choses in action" includes deposits in banks, bonds, notes, credits and evidences of debt, but does not include shares of stock in any corporation.[10]

Corporation taxes. The state levies upon the gross receipts or gross earnings of public service corporations. The classes of corporations taxed and the rates levied are shown in Table II.

TABLE II
Connecticut Corporation Gross Earnings Tax IN EFFECT 1927[1]

Corporation	Per cent[2]
Water, gas, electric and power companies	1.5
Express companies	2.0
Telegraph, cable and car companies	3.0
Telephone companies	4.0
Street railways[3]	3.0
Steam, and electric other than street railways	3.5
Motor busses	3.0[4]

[1]Compiled from *Connecticut Public Acts*, 1927, ch. 210 and 268; United States Census, *Digest of State Laws Relating to Taxation and Revenue*, 1922, p. 61, sec. 9.
[2]Rate on gross earnings.
[3]Tax levied on gross earnings within the state.
[4]For purposes of taxation, motor bus companies are divided into three classes, depending upon whether they operate wholly within the state, or partially within the state and partially without the state, or wholly within the state in carrying out some operations but partly within and partly without the state in other operations. Companies included in Class B are not taxed on a percentage basis but are required to pay one cent for each bus-mile which the company shall have operated motor vehicles over highways within the state.

Bank tax. Savings banks are required to pay to the state an annual franchise tax on the excess of their deposits, exclusive of surplus, over $50,000, and over the amount invested in bonds of the state or any town or city thereof, in aid of the construction of any railroad which is exempt from taxation, and also over the amount invested in stocks of banks, national banks, and trust, insurance, investment and bridge companies on April 1, 1901, and still held. The rate of the tax equals one-fourth of one per cent of the amount of its deposits remaining, less the amount of local taxes on real estate in Connecticut. This tax is in lieu of all other taxes. Other banks and trust companies having savings departments pay the same tax on all savings deposits as is required of savings banks.[11]

National banks having savings departments and paying interest on deposits therein, are required to return annually to the assessors of towns, boroughs, or cities in which depositors in such departments reside, a list of such depositors and the amount on deposit by each. Such amounts are added by the assessor to the tax list returned by such depositors if not already included, together with a ten per cent penalty. This does not apply to banks which elect to pay the tax to the state upon their savings deposits as required to be paid by savings banks.[11]

Insurance companies. Each share of stock of every insurance company incorporated under the laws of the state of Connecticut shall be taxed on the fair market value thereof, according to the following plan: in the year 1925, 8 mills; in 1927, 6 mills; in 1928 and each year thereafter, 4 mills, upon the fair market value of each share of stock. Taxes paid by an insurance company on real estate may be deducted. The taxes are paid by insurance companies and stockholders are exempt from taxation on their shares of stock.[12]

Each insurance company described in section 1 of this act shall pay annually a state tax "on its corporate franchise equal to 2 mills on the fair market value of each share of its capital stock" as determined by the state board of equalization. "There shall be no deduction from the market value of such share in the computation of such tax, and no deduction from such tax."[13]

Domestic insurance companies, conducting business in whole or in part upon the plan of mutual insurance, including companies whose policy holders participate in the profits, shall pay an annual franchise tax of 3¼ per cent in the years 1926 and 1927, and 3 per cent thereafter, upon the total amount of interest, dividends, rents and other investment income actually received, exclusive of rents from real estate situated and taxed within the state, interest on evidences of indebtedness exempt from taxation, and income of stock otherwise liable to taxation. This tax is in lieu of all other taxes except taxes upon real estate and upon capital stock.[14]

Corporation income tax. All corporations for which no specific rate is provided by law, and which are required to report to the collector of internal revenue for the assessment and payment of an income tax, must pay an annual tax of 2 per cent upon net income for the next preceding fiscal year or calendar year, which is taxable by the United States. This tax is in lieu of all other taxes except that on increased capital stock. When a company does inter-state business, the tax commissioner apportions the tax on the basis of real and tangible personal property within and without the state.[15]

Unincorporated business and manufacturing tax. Mercantile and manufacturing establishments (other than corporations) engage in retail or wholesale mercantile business, or in manufacturing, pay annually on the entire gross income of such business conducted within the state, one dollar on each thousand dollars or fraction thereof from retail mercantile business or manufacturing, and 25 cents on each thousand dollars or fraction thereof from wholesale mercantile business.[16]

Motion picture films. A state tax is levied upon every motion picture film or copy thereof exhibited within the state. "The amount of such tax, including the fee for registration of every such reel or film or copy thereof of 1000 feet or less, shall be ten dollars, and for each 100 feet of film in addition, 50 cents." The tax shall be paid to the tax commisisoner at the time of the registration of the film.[17]

Admission and amusement taxes. By an act passed in 1923, every person who is required to pay an admission tax by the Federal government, shall pay to the state a tax which shall be equal to 50 per cent of the tax levied by the Federal government.[18]

An act passed in the year 1927 imposes a state tax upon theaters, operas, or other places of amusement. Places of amusement are classified upon the basis of their seating capacity, and provision is made for the levying of taxes or fees graduated according to the class into which any place of amusement falls. The taxes to be levied under this act range from $40 per week on places of amusement having a seating capacity of 1,500 or more, to $5 per week upon places of amusement which have a seating capacity of less than 500 and exhibiting not more than 2 nights a week.[19]

Business, occupational and professional license taxes and fees. Connecticut, in common with other states in the Union, levies license taxes and fees on a large number of specified professions, occupations and business activities. Included in this general group are taxes levied upon dealers in dairy products, drugs and motor fuels; pharmacists, physicians, dentists and many others; and a considerable number of fees paid into the state treasury for services rendered or privileges granted by state officials or departments. The proceeds of these fees are in part pledged to specific appropriations and in part added to the funds derived from miscellaneous sources which are available for all general appropriations.

State Taxes as Sources of School Revenue

In the year 1925-26, Connecticut expended 7.3 per cent of her total civil-list account or state general fund in appropriations for the benefit of public elementary and secondary schools.[20] To attempt to determine the extent to which each of the various types of state taxes described in previous paragraphs contributes to the support of schools is obviously impossible for a number of reasons. Not one of these taxes is levied specifically for the benefit of schools. Moreover, the schools do not have any claim on any fixed per cent of the proceeds of any state tax nor upon any fixed amount payable therefrom. Again, as pointed out in connection with Table I, 39 per cent of the total state receipts are pledged in whole or in part to specific appropriations and to the extent pledged are not available for general appropriations. For these and other reasons unnecessary to detail at this point the most that can de done in the case of Connecticut is to show the relative importance of each state tax contributing to the state civil list or general revenue fund from which all appropriations are paid. This is done in Table III which presents a source analysis of the total state receipts for the year 1925-26.

TABLE III
Source Analysis of Connecticut Total State Receipts 1925-26

No.	Source Type	Amount	Per cent of total[1]
	Corporation Taxes		
1.	Gross earnings[2]	$ 3,443,093.03	11.63
2.	Income[3]	1,995,923.71	6.74
3.	Insurance stock	1,108,732.33	3.74
4.	Insurance Mutual Life	499,128.24	1.69
5.	Banks, Savings	1,258,991.06	4.25
6.	Non-resident Stock[4]	705,699.60	2.38
	Total	$ 9,011,567.97	30.43
7.	Automobile fees[5]	5,884,789.94	19.87
8.	Inheritance taxes	2,506,930.17	8.47
9.	Gasoline tax[5]	2,344,426.09	7.92
10.	State tax (general property)	1,500,000.00	5.07
11.	Choses in Action	501,374.67	1.69
12.	Military (poll) tax	303,811.25	1.03
13.	Unincorporated business[6]	157,807.32	0.53
14.	Admissions tax[7]	12,106.37	0.04
15.	Miscellaneous receipts[8]	7,387,863.36	24.95
	Grand total	$29,610,677.14	100.00

[1]Connecticut Tax Commissioner, *Biennial Report*, 1925-26, p. 30.
[2]Includes taxes on steam and street railways, telephone, telegraph, express, water, gas, and electric companies.
[3]Levied on all corporations for which law provides no specific rates.
[4]On stock owned by non-residents in insurance, trust, and bridge companies and all banks except National banks.
[5]Entire proceeds paid to state highway department.
[6]Tax on gross income of unincorporated mercantile and business establishments.
[7]Equal to 50 per cent of federal tax.
[8]Included, 1925-26, $125,714.62 transferred from income of (state permanent) school fund, and many large items, e. g. (1) nearly $1,000,000 received for board and care of patients in state hospitals and sanatoria; (2) Agricultural College fees, sales, rents, etc., $552,-268; (3) State Board of Education miscellaneous receipts amounting to over $433,000. See Connecticut Comptroller, *Annual Report*, 1926, pp. 21-23.

[8]United States Census, *Digest of State Laws Relating to Taxation and Revenue*, p. 59, sec. 7; *General Statues of Connecticut*, sec. 1154 and 1159; *Connecticut Public Acts*, 1923, ch. 88; *Connecticut Public Acts*, 1925, ch. 26.
[9]United States Census, *Digest of State Laws Relating to Taxation and Revenue*, 1922, p. 56, sec. 2.
[10]*Connecticut Public Acts*, 1923, pp. 3615-3616, ch. 190, sec. 6.
[11]United States Census, *Digest of State Laws Relating to Taxation and Revenue*, 1922, p. 61, sec. 9.
[12]*Connecticut Public Acts*, 1925, p. 3960, ch. 186, sec. 1.
[13]*Ibid.*, sec. 2.
[14]United States Census, *Digest of State Laws Relating to Taxation and Revenue*, 1922, p. 61; *Connecticut Public Acts*, 1925, p. 3958, ch. 184.
[15]United States Census, *Digest of State Laws Relating to Taxation and Revenue*, 1922, pp. 61-62, sec. 9.
[16]*Ibid.*, p. 62, sec. 10.
[17]*Connecticut Public Acts*, 1925, p. 3946, ch. 176.
[18]*Ibid.*, 1923, p. 3572, ch. 135, sec. 5.
[19]*Ibid.*, 1927, pp. 4426-4429, ch. 318.
[20]Total civil list or general revenue fund, $29,610,-677.14. Total school appropriations therefrom, including certain payments for state board of education, $2,-147,160.08.

(Continued on Page 150)

The Effects of Annual and Semiannual Promotions as Revealed by Public Progress[1]

Harry A. Greene, University of Iowa

The traditional theory on which the majority of courses of study are based assumes that the instructional material is adjusted to the abilities of the middle or average group of pupils. Such a gradation of subject matter means, of course, that for a certain group of superior pupils the subject matter is entirely too easy, and, assuming a more or less normal distribution of ability on the part of these pupils, a similar number find the material too difficult. Out of these two groups of pupils come the misfits in the school. Out of the superior group comes the potentially accelerated pupil. Out of the slow group comes the retarded pupil.

If the theory of subject-matter gradation actually held we should have approximately equal groups of retarded and accelerated pupils. But such is not the case as the evidence readily shows. Accordingly, ever since the first school administrator attempted to build a single course of study for a grade group of pupils of widely varying abilities, he has faced the problem of devising more flexible promotion machinery.

Many attempts have been made to break the so-called "lock-step" in our schools. Prominent among these are the Batavia Plan in which an assistant teacher is used to coach the laggards, the Pueblo Plan, the new Cambridge Plan, the Portland Plan, the Santa Barbara Plan, the Mannheim, the Baltimore Plan, all differentiated course plans, all adapted to the larger types of school organizations but certainly not suitable for the smaller schools.

Meeting the Problem of Flexible Promotion

By far the most common of the administrative efforts to meet the problem of promotional flexibility in the typical smaller city schools is the so-called semiannual or semester-promotion plan. Under the annual promotion plan the child who fails to receive the expected promotion at the end of the year must repeat the entire year of work. Similarly, a bright pupil deserving a double promotion cannot be given this opportunity so readily, because an entire year of work must be jumped by so doing. This naturally has the effect of piling up retardation with only a little relief in the form of special acceleration of pupils.

Students of school administration have for a number of years been recommending and inaugurating the semiannual-promotion plan in school systems. Supt. W. T. Harris of St. Louis, between 1869 and 1875, recommended the development of more flexible promotion machinery. In 1921 the Baltimore survey committee recommended the definite adoption of semester promotion for all schools in the city. The following reasons are quoted from the report: "This will increase the flexibility and adaptability of the school, and help to—

a) increase the per cent of under-age and accelerated pupils,

b) increase the per cent of normal-age and normal progress pupil,

c) decrease the waste involved in repeating an entire year's work instead of a half year when a pupil fails of promotion."

Evidently these recommendations were based largely on theory, for in spite of a very elaborate tabulation of related child-accounting problems in the Baltimore survey, no tangible data supporting these claims for the semiannual-promotion plan were presented.

A study made by Dr. Odell[2] in 1922, based on approximately fifty thousand cases, casts some light on this problem although it is not specifically emphasized. He points out that the average over-ageness and the per cents of pupils over-age and under-age are larger for schools having semester promotions. He also emphasizes the fact that the size of the school does not affect these indices.

The absence of any other extensive evidence, and the continued recurrence of the problem as a matter of administrative practice in smaller school systems prompted the collection of the data presented here. This study itself is, in a sense, a by-product of a larger state-wide study of pupil progress in Iowa.[3] The data utilized represents the records of between 37,000 and 38,000 school children taken from representative small school systems in Iowa.

In this study three major types of measures for the comparison of the efficiency of the two types of school promotion are used; namely, age-grade indices, progress indices, and relative failures and double promotions.

Age-Grade Distribution of Pupils

The age-grade distribution is one of the earliest child-accounting devices used by administrators. This is really only another way of saying that administrators have long recognized the fact that one of the most direct measures of school efficiency is the rate at which children pass through the school. In spite of the fact that age-grade indices are subject to a number of limitations they are useful as expressions of the administrative effects of certain types of school organization .

Three of the most important age-grade indices are (1) the percentage of pupils over-age, (2) the percentage of pupils at-age, and (3) the percentage of pupils under-age for each grade. This information grouped according to cases obtained from schools using annual and semiannual promotion is presented in Table I.

TABLE I. Pupils Over-Age, At-Age and Under-Age for Each Promotion Plan

		Promotion Plan: Annual		Promotion Plan: Semi-Annual	
		No. Cases	%	No. Cases	%
Total	Over-Age	5,961	23.4	2,480	19.6
	Years:				
Over Age	5 or more	67	.2	21	.2
Over Age	4	152	.6	66	.5
Over Age	3	425	1.7	193	1.5
Over Age	2	1,446	5.7	544	4.3
Over Age	1	3,871	15.2	1,656	13.1
At-Age		10,308	40.4	4,597	36.4
	Years:				
Under Age	1	8,272	32.4	5,005	39.6
Under Age	2	953	3.7	536	4.2
Under Age	3	21	.1	11	.1
Total	Under-Age	9,246	36.2	5,552	44.0
Grand Total	Cases	25,515	100.0	12,629	100.0

Table I shows that of the total of 25,515 pupils in schools promoting annually 9246, or 36.2 per cent, were classified as under-age, while 10,308, or 40.4 per cent, were classified as at-age, and 23.4 per cent were over-age for their grades. Compared with this, 44 per cent of the pupils in the school promoting semiannually were under-age, 36.4 per cent were at-age, and 19.6 per cent were over-age for their grades. This table shows for each type of school, the number and percentage of cases one, two, and three years under-age, as well as similar data for those one to five or more years over-age.

It will be noted that the proportion of over-age pupils is somewhat higher in the annual-promotion schools, and that while the percentage of pupils at-age for the annual-promotion schools is somewhat higher, the proportion of under-age pupils is significantly higher in the semiannual-promotion schools. If those pupils who are only one year over- or under-age are thrown in toward the middle, the proportionate number of pupils at-age in the two types of schools is practically the same.

A slightly different view of the age-grade conditions found in these two types of schools is presented in Figure 1. This is a graphic picture of the percentage of pupils in schools using the two types of promotion who are two or more years over-age or two or more years under-age. The position of the curves shows clearly that serious over-ageness is more apt to be presented in the annual-promotion schools. The graph also shows that under-ageness is more apt to be found in the semiannual-promotion schools. Assuming that in general over-ageness is undesirable and that under-ageness is desirable, any evidence of superiority on the part of the pupils involved in the analysis seems to favor the semiannual promotion schools.

An interesting condition is found in the case of the percentage of first-grade pupils who are two or more years under-age. Practically 5.5 per cent of the first-grade pupils in annual promotion schools (See Figure 1) are significantly under-age according to the data. This is doubtless explained by the fact that in Iowa at least, school authorities tend to be more liberal in the matter of the first-grade entrance age when the postponement of entrance means a matter of a school year to the pupil. It will be noted, however, that this under-ageness disappears quite promptly in these annual-promotion schools.

In a summary of the age-grade data presented thus far, it may be said that there seems to be a rather definite indication that a pupil, obliged by the force of circumstances to attend a school organized on the annual-promotion basis, has a somewhat greater chance of being forced back into the over-age groups in his school and a somewhat smaller chance of being advanced into the under-age groups. In view of the many variables which may enter into age-grade data any statement of the practical significance of this will be reserved until after other data are presented.

Preparing a New Type of Progress Index

It has been suggested that age-grade data are subject to certain errors. For example, over-ageness does not prove the existence of retardation. Over-ageness may be due to *delayed school entrance*, or to *irregular attendance*, as well as to *real mental retardation* resulting in failure and irregular grade progress. The appreciation of this difficulty forced administrators to develop a new type of progress index. This newer measure considers only the units of school progress made in relation to the opportunity for progress. A first-grade child who is 8 years old is *over-age* for the grade, but if the same 8-year-old child has been in school two semesters and has made two semesters of progress he is *normal*.

By preparing a progress distribution of the 38,144 pupils in the two types of schools it was found that on the average .935 of a semester of progress was made by the pupils in the annual-promotion schools, and that .931 of a semester of progress was made by the pupils in the semiannual-promotion schools. Interpreted in terms

(Continued on Page 86)

[1] A paper read before the American Educational Research Association at Cleveland, February 23, 1929.

[2] Odell, Charles W., *The Progress and Elimination of School Children in Illinois*, Bulletin No. 19, Bureau of Educational Research, University of Illinois, Urbana.

[3] A project of the Bureau of Educational Research and Service, University of Iowa, under the direction of the author of this article. Freden, Gustaf, *Age-Grade and Progress Indices for the Public Elementary Schools of Iowa*, No. 2, Vol. IV, University of Iowa Studies in Education. Special acknowledgments are due Dr. Freden for certain of the tabular data used in this article.

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WM. GEO. BRUCE
WM. C. BRUCE } EDITORS

EDITORIAL

THE RIGHTS AND PRIVILEGES OF THE AMERICAN SCHOOL CHILD

In the maze and mass of labors, attending school administrative effort, the true objectives of such effort are sometimes obscured through the close application to the immediate tasks in hand, and the worries and cares with which the individual school executive must grapple. But, the thoughtful executive knows that boards of education, superintendents and teachers, schoolhouses and janitors—all exist for one sole purpose only, namely, the mental, moral and physical welfare of the child.

In a recent article on this subject Mr. W. N. Carpenter of the George Peabody College for Teachers enumerates in a terse way the rights and privileges of the school child. He primarily holds that every child must have the opportunity to attend school the same number of days that is afforded to every other child, and that all are entitled to the services of a trained teacher.

He further holds that the child has the right to be placed into a schoolhouse which is free from fire hazard, located in healthful environment, and scientifically built and equipped. He then prescribes a school "where medical and dental inspection are available without charge; where organized play is provided; where love for home and an appreciation for the beautiful are taught; where the individual is trained for his lifework, and where the problems of the school come from the problems of the community, state and nation, and not altogether out of books."

Mr. Carpenter demonstrates that in all states compulsory education laws are enforced, and that a competent teaching staff is contemplated in every plan of school government. On the question of safety he quotes William B. Ittner, the schoolhouse expert who says:

"More attention has been given to safety methods and devices in schools during the last twenty-five years than during any previous period, due chiefly to the congestion of urban centers, the consequent enlargement of schools, and the increased fire hazard. Fire-resistance construction has gradually replaced the non-fire-restive."

Then there is the matter of transportation. With the advent of the motor-driven vehicle the transportation of pupils to and from school has rapidly grown in popularity. The United States bureau of education says: "Transportation of pupils living long distances from school is fast being recognized as a function of school boards in the fulfillment of their obligation to provide school facilities. The laws of forty-three states specifically legalize transportation."

Much might be said of the progress made in the direction of the health care of the pupil. School authorities have gone to great lengths towards providing medical inspection, nurses and school physicians, providing spacious playgrounds, vocational guidance and the like.

An ideal situation has by no means been reached, but if one were to go over the entire category of school activities and school service one would readily come to the appreciation that the efforts to meet the rights and privileges of the American school child were being met in a magnificent manner. Much more remains to be accomplished, but as long as progress is being made from day to day the mission of the school constantly comes nearer the ideal and the perfect.

ONCE MORE THE PUPIL STRIKE QUESTION

The past year has seen some new and startling expressions on the relations which the student bears to the school authorities. The demonstrations staged by high-school students at Superior, Wisconsin, Gary, Indiana, and other American cities have not altogether provided an edifying spectacle, or one in keeping with that order and discipline which is fundamental in and essential to school administrative life.

The principal concern is not so much over the differences which may have arisen between the professional factors and the administrators as it is in the moral welfare of the child. These dramatic outbursts of protest spell the incipient stages of anarchy and constitute a perversion of the fundamentals upon which government is founded. The schools are the prerequisite to stable government and this capacity must make for that citizenship which primarily is intelligent, obedient, and loyal.

Let us assume that the school authorities were wrong in that they removed this or that person from the school system. The fact remains that a school system is not maintained either for the benefit of school-board members or teachers, and that any differences which may arise between them cannot serve as a deterrent to the mental and moral welfare of the child.

True, pupils themselves take the initiative in setting up a protest against an alleged wrong, but in doing so they cause injury to themselves rather than good to the cause in hand. If the school officials are to blame in the first instance for a rupture, the parents who sanction and abet a school are, after all, the real culprits in the case.

The only way to squelch a ridiculous school strike—and all of them are ridiculous—is to uphold the slogan "back to school." This must not only be exerted with firmness by the authorities, but with equal firmness by the parents as well. The aggrieved party, be it the superintendent, principal, or teacher, can do no more heroic act than to insist that any loyalty that the pupil can express to himself or herself, is expressed only by an orderly return to the school.

We can readily imagine that the professional worker who believes himself wronged will gain some satisfaction in a demonstration of protest, dramatically and picturesquely staged. But, he who countenances such action ignores the most sacred trust that goes with the ideal of a great profession and yields to the passion of retaliation. He can demonstrate that ideal, in or out of school, by submerging self interest and personal chagrin, and holding loyalty to that which is in the interest of the pupil, and that means "a back to the school" movement and obedience to authority. Such an attitude on the part of the professional worker will shame the administrator who has been less considerate of pupil welfare.

So much for the schoolmaster side of school strikes. As far as the school administrator is concerned the experiences of the year lead to the inevitable conclusion that hasty and ill-considered dismissals lead to trouble. The proprieties and equities which should guide the relations between school worker and school board must be observed. Circumspection and judicious procedure should attend every departure or innovation engaged in by the school authorities.

POPULAR EDUCATION

One of the most gratifying developments in the educational activities of this country is found in the mode and manner of transporting pupils to and from school in the rural districts and crippled children in the cities. The number of children thus conveyed may be safely estimated somewhere around the half million mark. The establishment of the consolidated school has unquestionably been the incentive while the motor bus has been a marvelous contributing factor.

Nearly every state in the Union has enacted laws authorizing the cost of pupil transportation to be borne out of the regular school funds. The number of vehicles employed runs into high figures. While the horse-drawn wagon still obtains in sections of the South, and the sleigh during the winter months in the North, the motor bus has become the popular vehicle in practically all sections of the country.

The estimated yearly expenditure for pupil transportation is something like fifteen million dollars or an average of thirty dollars per pupil per year. From an examination of numerous state reports on the subject of pupil transportation, it does not appear that any uniform system of administration has been adopted. In many sections the contract system prevails. The contracts are awarded on a basis of mileage and routes, and frequently on a per-day or season basis.

In many instances the school system owns and operates the school buses. Drivers are regularly employed and placed under a superintendent who directs garage work, the planning of routes, and the general administration of the bus service. As a rule, the large city school systems, too, own their vehicles and operate them under fixed rules and regulations.

These regulations primarily contemplate the safety of the pupils and the expeditious transport of the children. But they also contemplate the discipline of the pupils while in transit, and provide rules of conduct for the drivers.

While the pupil transportation service has reached remarkable proportions throughout the country, it is safe to say that improvements and refinements are still the order of the day. Those who have given the subject careful study are conscious of the fact that perfection has by no means been reached. While the method of approach differs in the several states, it is also certain that the conditions as to roads and schools, number of pupils, and the distances to be traveled, vary most radically.

In conclusion it must be said that the pupil transportation idea not only goes a long way to solve the rural-school problem, and that the results thus far obtained from the same must be regarded as a magnificent achievement in America's system of popular education.

Therefore, it is unwise to extol higher learning to the disparagement of a common school training. Both are vital to the stability and progress of the nation.

PRICE UNIFORMITY IN SCHOOL EQUIPMENT AND SUPPLIES

The industries engaged in producing the things that go in and about a schoolhouse have never, in the distribution of their products, been upon any settled basis. The competitive attitude maintained by them has not only been carried to ruinous lengths so far as the manufacturers themselves were concerned, but has also proven detrimental to the school interests of the country as a whole. It has led to a stage where it has become a scramble in price-cutting rather than a beneficial school service.

The situation, it would seem at first glance, concerns the producers and distributors of school materials only, and that the buying school public has no interest in the marketing methods employed. But there is this to be remembered, that if the manufacturer is tempted to sacrifice quality, the consumer will be the sufferer. There are many items of supplies and equipment which go into a schoolhouse with which the purchaser cannot be familiar. He must rely upon the integrity of the producer and distributor.

Those who buy the materials that go into the schoolhouse want to get what they pay for, and at the same time get it at the lowest price that has been exacted elsewhere. The competitive system does not always permit this condition. It has the tendency to cut prices in one place where the competition is acute, and to increase prices where competition is absent. Thus, occasionally the school authorities of one community awaken to the fact that they have not secured the lowest market price on the purchases made. There are state authorities that exact a bond from the school-book publishers insuring prices as low as exacted elsewhere. This makes for uniformity of sales methods and for fair dealing with the consumer.

The solution must come through the acceptance of the one-price policy through which the school system of the west secures the same terms that are accorded to the east, the south or the north. One large producer has inaugurated the one-price policy, namely, a price fixed at the factory, plus the transportation costs.

The largest business enterprises of this country have long recognized the fallacy of price cutting. It endangers the quality of the product and tends to unfairness. Those engaged in manufacturing the various school articles must sooner or later come to the conclusion that uniformity of prices will not only make for stability from an industrial point of view, but will also insure more equitable and satisfactory service to those who buy their product.

The basic thought which must be accepted, if a solution is to be found, must be that the producer and distributor will sell at the lowest possible prices with a fair margin of profit.

It remains to be seen whether the school public will respond to a sound business policy, or continue to encourage a ruinous rivalry through the bidding system. The ultimate aim should and must be to attain an equitable and efficient service in the materials that make for educational progress. Nothing less will do.

TOO MUCH ARCHITECTURAL FORMALITY

Recent developments in schoolhouse planning and design indicate that at least a few of the architects who are specializing in this important type of public buildings are breaking away from the formality that has characterized the work of the last two decades.

Our great city-school buildings, occupying vast areas, will perhaps always be necessarily formal and, where they embody the elements of the historic styles, will be carefully balanced, and exact in the reproduction of typical details. And still such buildings need not be rigidly exact in the disposition of parts. The demands of the plan, and the variations of types of rooms, will frequently permit, or even require, minor variations in the exterior that will remove the dead monotony of identical window groupings, roof lines, and blind wall spaces. The Columbia High School at South Orange-Maplewood, N. J., is a fine example of a large high school in formal Gothic style, that involves most interesting variations in detail, roof lines, gables, and fenestration without destroying any of the fine sense of balance which the building as a whole conveys.

Why the small city and the village should ape the large city in erecting deadly formal buildings is a mystery that can hardly be explained, except that architects have sought to comply with the demands of their clients, who want to imitate their larger neighbors. Still, it seems to be essentially without reason for the semirural, or small industrial community, to attempt the expense of a columned porch borrowed from a French palace or the gargoyled tower of an English-Gothic college structure. In either case, the cost will be prohibitive and the spirit of the design will be entirely out of harmony with the democratic and essentially practical ideals of the educational processes carried on inside.

It should not be inferred from the foregoing that the historic styles are to be disparaged as sources of design for the small-town school. On the contrary, we cannot far depart from precedent, without reverting to the box-car types of the last century, or running the danger of bizarre idioces arising from the present "modern movement." The latter is producing some most beautiful examples of business buildings, but the unintelligent or unskilled application of the highly original underlying ideas result in abominations that are immeasurably worse than any school building in the most grand manner of an historic style. Between the extreme formality of the historic styles and a "modern" abomination, there is a great range of informal design that springs from historic sources commonly spoken of as "minor" architecture, or suggested by our own colonial heritage.

There is ample evidence that all American education is losing some of the hard-and-fast formality which characterized school organization and teaching methods of the past forty years. The newer ways of classification, promotion, discipline, all point to greater attention to the abilities, the nature, and the needs of the individual. This newer spirit in the school cannot help but reflect itself in the design of school buildings. It deserves the careful study of architects and school authorities so that the school buildings will truthfully embody the ideas and ideals, the joy and the enthusiasm of children and teachers.

SICK-LEAVE ALLOWANCES FOR TEACHERS

No item of personnel policy of school boards shows wider variations in practice than sick-leave allowances for teachers. The situation is difficult to understand when it is remembered that the problem of pay for periods of illness has been before school boards much longer than the problems of permanent tenure, old-age pensions, or single-salary schedules.

In general, a liberalizing tendency which is to the advantage of teachers, has been observable in practically all communities. This has been due no doubt to the shortage of teachers during the war years, and has been influenced by the growing attention of private employers to social-welfare plans for their employees. A final and perhaps the most important influence has been the steady propaganda of teachers themselves for recognition of the professional character of their services.

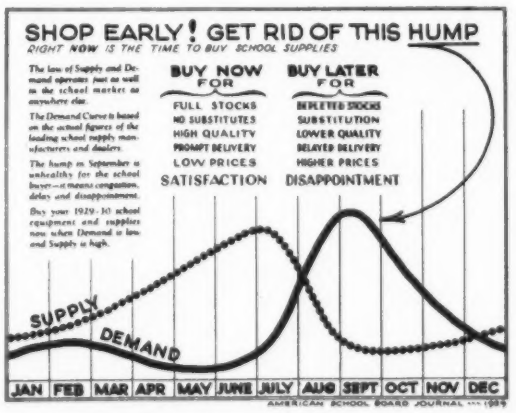
Supt. I. M. Allen of Highland Park, Mich., in discussing the available studies of sick-leave pay draws seven valuable conclusions:

1. Boards of education grant teachers sick-leave allowance on pay as a matter of good practice rather than a common law right.

2. No guiding principles have heretofore been laid down for determining the amount and rate of compensation for sick-leave allowance.

3. The needs of the majority of teachers rather than the minority should determine the amount of sick-leave to be granted.

4. The needs of the majority should be protected in case of exceptionally long illness through the provisions of cumulative leave.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THE ARGUMENT FOR EARLY PURCHASES OF SCHOOL SUPPLIES AND EQUIPMENT

5. The total number of days of absenteeism due to illness of teachers should be determined by statistical studies, and the amount of money needed to provide substitute service for such absenteeism should be appropriated as a separate item of the budget apart from the usual appropriation for contract salary of teachers.

6. The number of days remunerated for sick-leave within a system should not exceed the number of days for which substitute service has been anticipated.

7. The teachers themselves should safeguard the execution of the foregoing principles through administrative cooperation and adherence to good health standards.

It might be added that public interests based upon the interests of the children should be the guiding principle upon which school boards base their policies and regulations for making sick-leave allowances. If the children are considered first, it will not be difficult to introduce into such regulations a definite motive which will cause the teacher to try to keep well. It will not be difficult either to provide some reward for the teacher who has rendered uninterrupted service, and it will not be difficult to definitely penalize the teacher who in any way abuses the benefits of sick-leave.

THE MASTER CRAFTSMAN

It was at Lincoln. We had seen the Roman gate, the remains of the Norman castle, the stables of John of Gaunt, before we entered the cathedral. This mammoth structure, with its three sky-piercing towers took, we were told, more than a century in building. Its massiveness, its grandeur, its perfect proportions, the indescribable beauty of the Angel Choir awed one into silence.

Leaving my companions that I might be alone for a little, I strayed into an unfrequented nook; and as my gaze wandered over the place it fastened upon a piece of sculpture of peculiarly exquisite design and workmanship. Standing there, I tried to envision the master craftsman as he stood before the rough stone and saw within it the angel which his soul longed to liberate. I imagined him with chisel and mallet patiently working away the imprisoning stone in order that the spirit which he saw there might come forth to bless the world. And I knew that as he worked upon his masterpiece and as it found expression in finer lines from day to day, those hours, weeks and months of toil were liberating his own spirit as well.

And then the work was finished. Fate decreed that it should find its place only in the unfrequented nook of the great cathedral, an insignificant part in the great whole; but there it stands to bless those who seek it out, and those who find it feel its immortality, sense the presence of the master craftsman, and know that the great cathedral would not be quite complete without it.

To imagine that the master craftsman was toiling for the glorification of his chisel and mallet would be to imagine the impossible. If these necessary tools entered at all into his thoughts they held the place only of tools whose one use was to aid him in the liberation of the spiritual beauty which he saw in the block of stone. Every line of that statue tells the story. We know that the master craftsman felt that he was working upon a thing of beauty, a detail of the greater things of beauty that had engaged and was engaging the attention of hundreds of other master craftsmen. Together they were building a cathedral.

As master craftsmen, we teachers, too, are working upon details of a great cathedral, a cathedral fashioned after the image of God Himself, with which no cathedral of insensate stone can ever be compared in beauty or utility. The subjects which we teach are the tools to be used in developing to perfectness the detail assigned to us by the Master of all good workmen. Let there be an end of the glorification of the tools we use, the subjects we teach, and let our eyes rest upon the imprisoned spirit within each youth; and with the best that is in us, let us work to bring our detail to perfection, refining our own lives in so doing. It may be placed in an unfrequented nook, but it is a part of the great cathedral of humanity, and without our perfected detail the work would be incomplete.

F. D. BOYNTON.

Ithaca, N. Y.

Index of School-Bond Prices[1]

Harold F. Clark, Teachers College, Columbia University, New York, N. Y.

School-bond interest rates increased sharply in March. The net interest rate of all school bonds sold in March was 4.76 per cent. The net interest rate on all school bonds sold in February was 4.52 per cent. As the figures show, the net interest rate on school bonds was .24 of 1 per cent higher in March than in February.

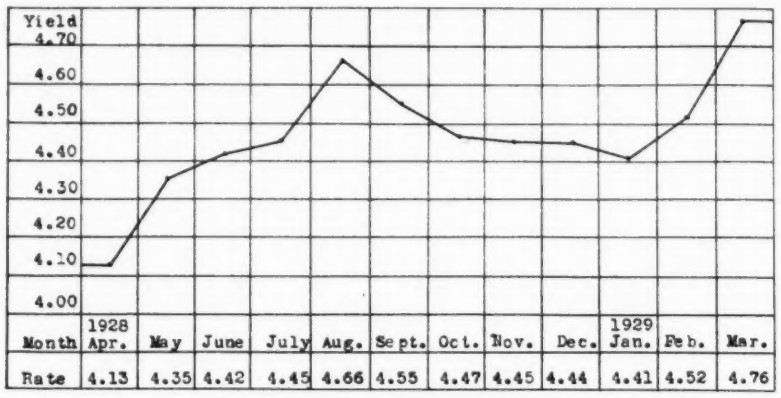

TABLE I. AVERAGE YIELD OF ALL SCHOOL BONDS SOLD DURING THE MONTH

This increase in bond interest rates carries our bond index to the highest point it has reached in over two years. At no other time in 1929, 1928, or 1927 was the rate as high as in March, 1929. As has been true for some time in the past, this high interest rate on bonds is due almost entirely to the diversion of credit into stock exchange speculation. Time after time in the month of March bonds reached new low levels. This is not to be wondered at in the face of the high rates paid for call money in New York. The following quotation from one of the New York papers shows the situation that developed.

"At mid-day, when the call money rate jumped from the renewal of 12 to 15 and then to 17 and finally to 20 per cent, the market was in a state of almost complete demoralization and at their lows for the day, stocks of all sorts were from 5 to as much as 25 points below the previous close."

With money earning anything from 8 to 20 per cent it is no wonder that large buyers are not enthusiastic about bonds earning 4½ or 5 per cent. As we have said so many times before, the situation is not likely to change fundamentally until there is a real change in the stock market.

TABLE II
Amounts and Yields of Bond Issues[2]

	December, 1928
1. School bonds sold during the month of March	$ 15,207,367
2. All municipal securities sold during the year (to date)	229,669,000
3. All school bonds outstanding (estimated)	3,253,000,000
4. Average yield of all school bonds outstanding (estimated)	4.63%
5. Yield of school bonds of ten large cities	4.57%
6. Yield of United States long-term bonds (Quotation the middle of January)	3.68%

[2]The monthly total of school bonds does not include all the bonds issued in the month, due to the difficulty of obtaining the yield on some of the issues.

The Federal Reserve Board after repeated warnings seems to be intending to use drastic means, if necessary, to make credit available for legitimate purposes at relatively low rates. At times during March government bonds were down as much as 20 or 30 points below the previous month.

Needless to say, these high interest rates have been a great hindrance to any active bond market. The result has been a most decided falling off in bond sales. The future course of bond prices probably depends largely upon the success of the Federal Reserve Board. It is very difficult to see how their policy even if successful, can get interest rates down in a short period of time. The very strong probabilities are that we are facing a period of relatively high interest rates on bonds for some time to come. If by any chance the stock market absorbs more credit, bond interest rates may go even higher. On the other hand, if money is released from the stock market bond interest rates may work to lower levels over the next few months.

A few school districts, by some unknown means, managed to issue bonds during March at a net interest rate of 4 per cent. This was in spite of the fact that there were times during the month when long-term federal-government bonds were yielding over 3.80. There were several school bond issues carrying a net interest rate of over 5 per cent and all too many of 6 per cent, with one issue as high as 6.25.

[1]Copyright by Harold F. Clark.

As Table II shows, school bonds sold in the month of March were $15,207,367. This compares with a total of $19,000,000 during the month of February. The reduction in the total of all municipal securities sold during the year to date was even greater than the reduction in school bonds; the total municipal securities sold to date is approximately $230,000,000. This compares with a total of over $360,000,000 worth of municipal bonds sold during the first quarter of 1928. As is evident, the sales in 1928 were well toward 50 per cent larger than in 1929. For the first time in a good many months the school bonds sold during the month of March carried a higher interest rate than the rate on all the school bonds outstanding.

TABLE V
Security Prices and Yields[7]

Date	Average Price of 393 Stocks	Average Price of 60 Bonds	Average Yield on 60 High-Grade Bonds
	(1926 Average=100)		
1929			
April	187.2[8]	95.9[8]	4.68[8]
March	189.1[8]	95.8[8]	4.69[8]
February	186.5	96.3	4.65
January	185.2	97.0	4.60
1928			
December	171.4	97.2	4.59
November	171.1	97.8	4.55
October	159.1	97.5	4.57
September	156.6	97.5	4.57
August	148.3	97.2	4.59
July	144.2	98.2	4.54
June	145.3	98.5	4.50
May	152.1	99.7	4.42

[7]As reported by Standard Statistics Company, Inc. Used by special permission.
[8]Not final.

TABLE III
Bond Sales and Rates[3]

Year	Bond Sales: School	Bond Sales: Municipal	Bond Sales: All Public and Private	Average Rates: Year	Average Rates: Municipal
1928	$240,000,000[4]	$1,413,000,000[4]	$8,000,000,000	1928	4.45
1927	$266,000,000	$1,509,000,000	$7,735,000,000	1927	4.49
1926	260,000,000	1,365,000,000	6,311,000,000	1926	4.61
1925	323,000,000	1,399,000,000	6,223,000,000	1925	4.58
1924	288,000,000	1,398,000,000	5,593,000,000	1924	4.26
1923	206,000,000	1,063,000,000	4,303,000,000	1923	4.76
1922	237,000,000	1,101,000,000	4,313,000,000	1922	4.81
1921	215,000,000	1,208,000,000	3,576,000,000	1921	5.18
1920	130,000,000	683,000,000	3,634,000,000	1920	5.12
1919	103,000,000	691,000,000	3,588,000,000	1919	5.04
1918	41,000,000	296,000,000	14,368,000,000	1918	4.90
1917	60,000,000	451,000,000	9,984,000,000	1917	4.58
1916	70,000,000	457,000,000	5,032,000,000	1916	4.18
1915	81,000,000	498,000,000	5,275,000,000	1915	4.58
1914	42,000,000	320,000,000	2,400,000,000	1914	4.38

[3]By special permission, based upon sales reported by the Commercial and Financial Chronicle.
[4]Not final.

The total school-bond sales in March were substantially smaller than in February and smaller than in March, 1928. This reduction in bond issues has made itself felt in the falling off of building construction, both educational buildings and buildings in general. The fear has been expressed that this contraction of building construction will go so far as to threaten the prosperity of the country.

TABLE IV
Average Yield of Long-Term Federal-Government Bonds[5]

Past Twelve Months: Month	Rate %	Past Six Years: Year	Rate %
1929		1928	3.437
April	3.71[6]	1927	3.464
Mar.	3.72[6]	1926	3.544
Feb.	3.66	1925	3.797
Jan.	3.59	1924	4.010
1928		1923	4.298
Dec.	3.53	1922	4.301
Nov.	3.48		
Oct.	3.55		
Sept.	3.54		
Aug.	3.56		
July	3.50		
June	3.40		
May	3.35		

[5]Taken from Federal Reserve Bulletin.
[6]Not final.

TABLE VI
Revised Index Number of Wholesale Prices[9]

Past Twelve Months: Month	All Commodities	Building Materials
1929		
April	96.8[10]	97.6[10]
Mar.	96.9[10]	97.8[10]
Feb.	96.7	97.5
Jan.	97.2	96.6
1928		
Dec.	96.7	96.8
Nov.	96.7	96.0
Oct.	97.8	95.0
Sept.	100.1	94.7
Aug.	98.9	94.6
July	98.3	94.4
June	97.6	93.9
May	98.6	93.5

Past Six Years: Year	All Commodities	Building Materials
1928	97.7	93.7
1927	95.4	93.3
1926	100.0	100.0
1925	103.5	101.7
1924	98.1	102.3
1923	100.6	108.7

[9]United States Bureau of Labor Statistics, 1926—100.
[10]Not final.

Table IV shows the continued rise in the yield of long-term federal-government bonds. The yield on some of the government issues is now the highest it has been for several years.

Table V shows the continued advance of security prices; the average price of over 400 stocks, as reported by the Standard Statistics Company,

(Concluded on Page 147)

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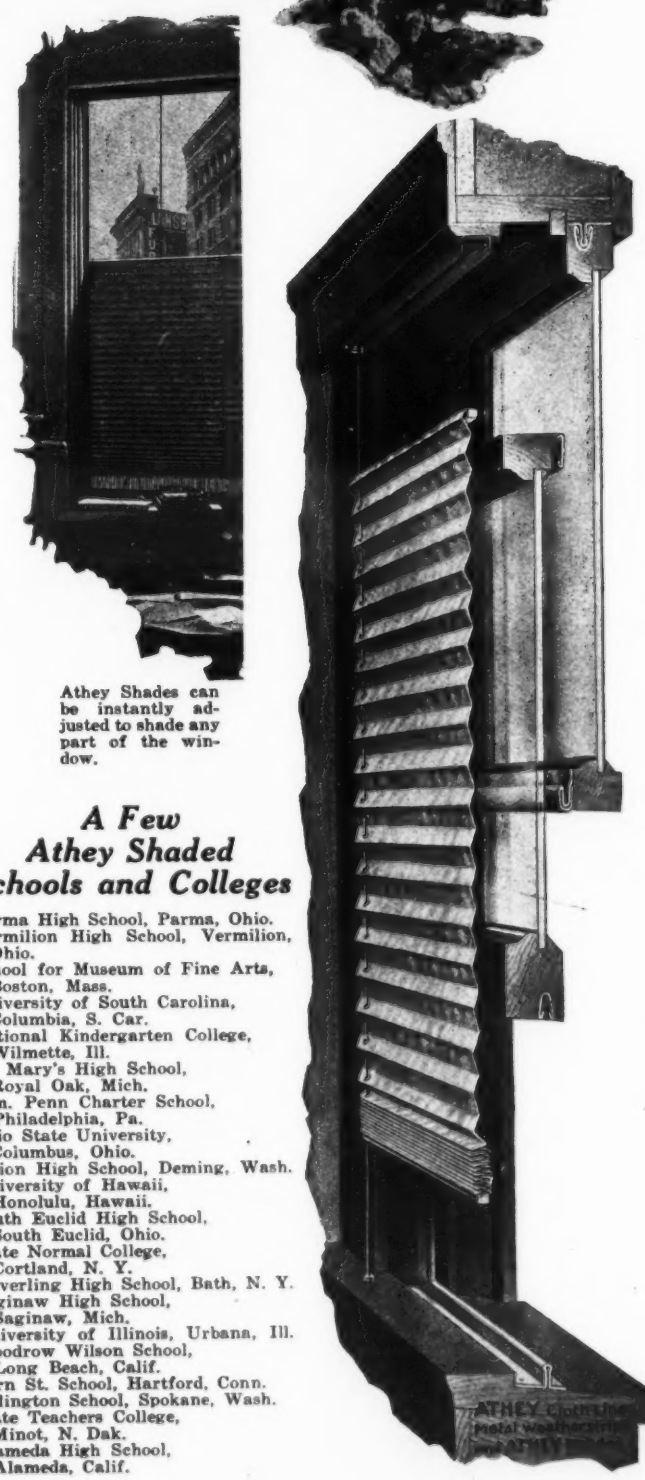

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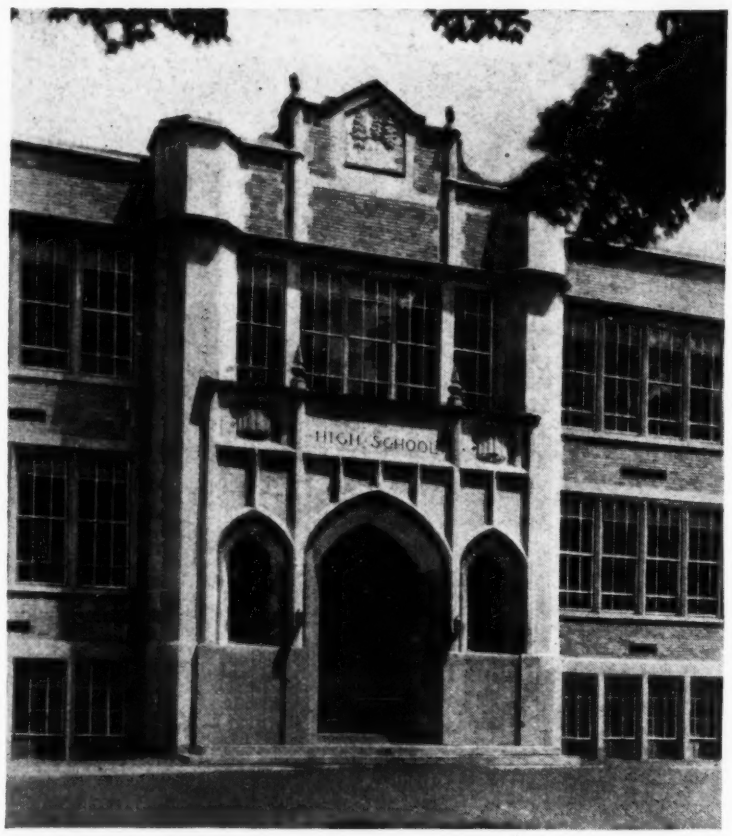

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School-Law Notes

A COURT DECISION ON SCHOOL-BOARD CONTRACTS

A school board may dismiss a woman teacher who, contrary to the provisions of her contract, marries during the school year.

The supreme court of the State of Wisconsin has recently rendered a decision, upholding this point of view in sustaining a ruling of the circuit court of Brown county, in the case of Elsie Ansorage, a teacher, against the board of industrial education of Green Bay.

It appears that the board of industrial education of the city of Green Bay entered into an agreement in writing with the plaintiff, Mrs. Ansorage, for the purpose of hiring her as a teacher for the ensuing year, at a stipulated salary. Prior to entering into the contract, the board had adopted an unwritten rule not to employ married women as teachers, unless no single teachers were available. It came to the knowledge of the board that the plaintiff was engaged to be married. They, therefore, inserted in her contract, a clause to the effect that in case marriage should occur at the Christmas holidays or before, at least thirty days' notice should be given. If not performed at that time, the teacher must agree to remain single until the close of the school year.

On January 20, 1926, the teacher was married. Nine days later she was notified in writing by the director of the vocational school that her services were no longer required. On January 31, the board adopted a resolution approving the dismissal of Mrs. Ansorage, and it was voted to hire an instructor to fill the vacancy.

The court action was brought in order to recover from the city the teacher's unpaid salary for the balance of the school year. The court found that the plaintiff was entitled to her salary up to the 18th day of February, 1926, amounting to the sum of $98.

In its ruling, the supreme court pointed out that the policy of the board was fully established, and that its policy was expressly incorporated in the contract itself and constituted an essential element of that document. The plaintiff, the court said, had full knowledge of the board's policy, both before she entered into the contract and when the contract was signed. She was also thoroughly familiar with the purpose of the board in hiring unmarried teachers in the vocational school.

In conclusion, the court maintained that a school board must be, and is ordinarily, clothed with a broad power of discretion. It is conceded that a married teacher can ordinarily perform her duties as satisfactorily as an unmarried one, but the board is charged with a duty which requires it to promote the public interests. The action of the board does not contravene the provisions of the state law, which recognizes the freedom of women to contract the same as men. The section of the law, however, refers only to the right of a woman to enter into a contract, and does not restrict the board in the employment of men or women, in accordance with its views. The court closed its argument with the decision to affirm the judgment of the circuit court of Brown county.

RECENT DECISIONS

School and School Districts

A petition for an election cannot be had to determine whether an elementary or common-school district annexed to a city high-school district shall be withdrawn and an independent high-school district organized (Calif. political code, §1733a).—Dodge v. Mitchell, 272, Pacific reporter, 352, Cal. App.

A proceeding to abandon and consolidate schools is invalid, without a petition signed by a majority of the voters in each district (Burns's annotated statutes of Indiana for 1926, §6851).—Mishler v. Emerson, 164 Northeastern reporter, 292, Ind. App.

School-District Government

A chairman of the county board is held subject to removal because of authorizing the clerk to affix a rubber stamp with facsimile of his signature to county warrants (Tenn. acts of 1915, c. 11, §1; Tenn. acts of 1925, c. 115, §6, par. 4).—State v. Smith, 11 Southwestern reporter (2d), 897, Tenn.

A member of the board of education, not shown to be such when wrongs complained of occurred, was not subject to ouster.—State v. Smith, 11 Southwestern reporter (2d), 897, Tenn.

Members of the school board were not subject to ouster for exceeding the budget without showing participation or approval in alleged improper expenditures (Tenn. acts of 1925, c. 115, §6).—State v. Smith, 11 Southwestern reporter (2d), 897, Tenn.

A township trustee must exercise discretion respecting a consent to an injunction against the sale of bonds and the execution of a school-building contract, irrespective of inducement.—Mishler v. Emerson, 164 Northeastern reporter, 292, Ind. App.

The acts and declarations of a trustee announcing that he intended to remove from the school district and would no longer act as a trustee are held to amount to a resignation.—Sealy v. Scott, 11 Southwestern reporter (2d), 605, Tex. Civ. App.

School-District Property

A county school board, after a school building burns, may relocate the site to better serve the convenience and welfare of the district.—Brantley v. Lake Cormorant Consolidated School Dist., 119 Southern reporter, 184, Miss.

The location of a school building prior to the issuance of bonds for the construction thereof did not prevent the relocation of the site after the building burned.—Brantley v. Lake Cormorant Consolidated School Dist., 119 Southern reporter, 184, Miss.

A complaint by materialman, alleging the contract between the contractor and the school district, setting out a bond referring to the contract, has authorized the conclusion that the contract alleged was referred to in the bond and did not relieve the bondsmen by reason of variance.—Sunset Lumber Co. v. Smith, 272 Pacific reporter, 1068, Calif. App.

A materialman is held not required to exhaust a remedy against the school board before proceeding against the contractor's bondsmen or prove amount in hands of the school board remaining unpaid to the contractor (public works act of 1919).

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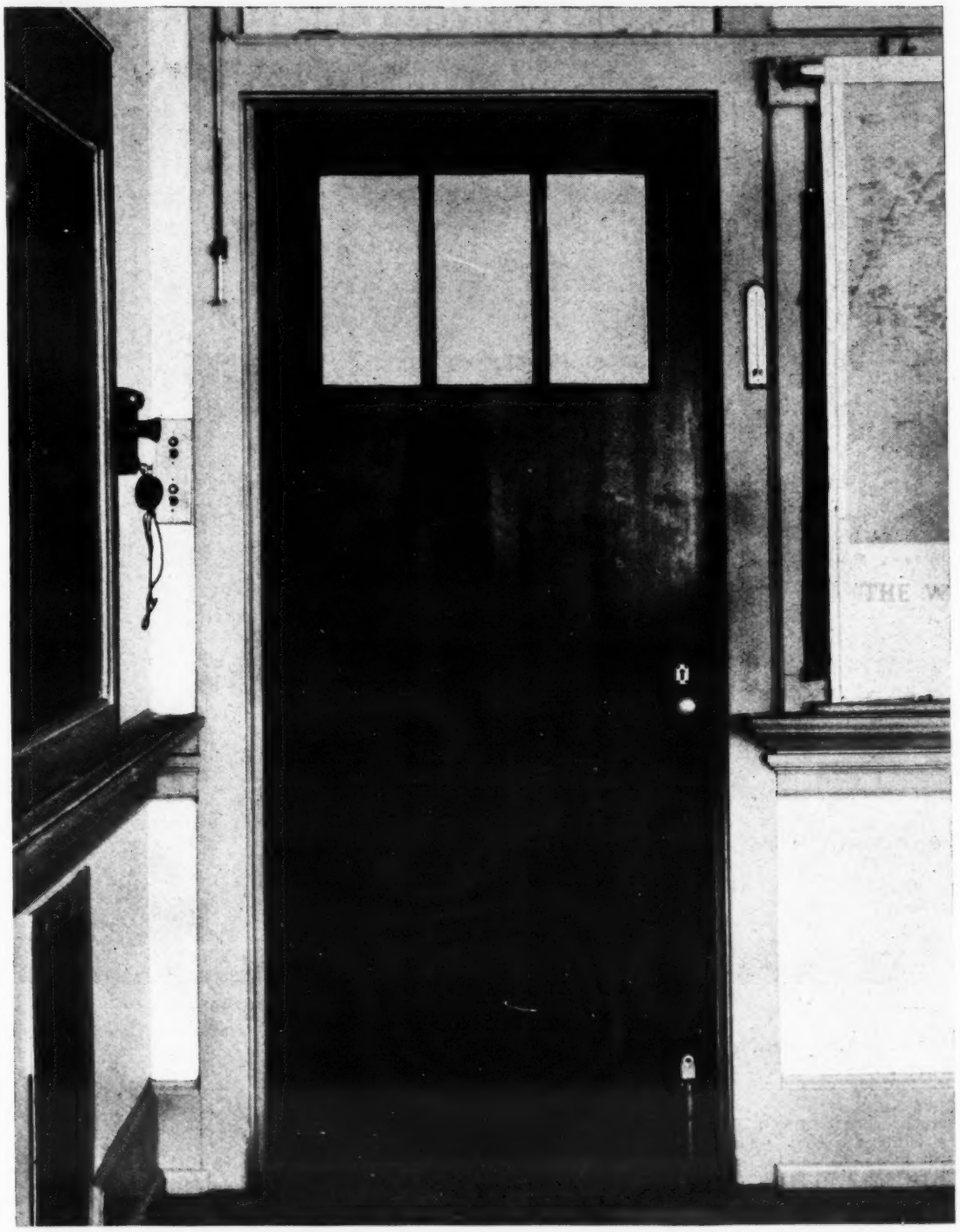

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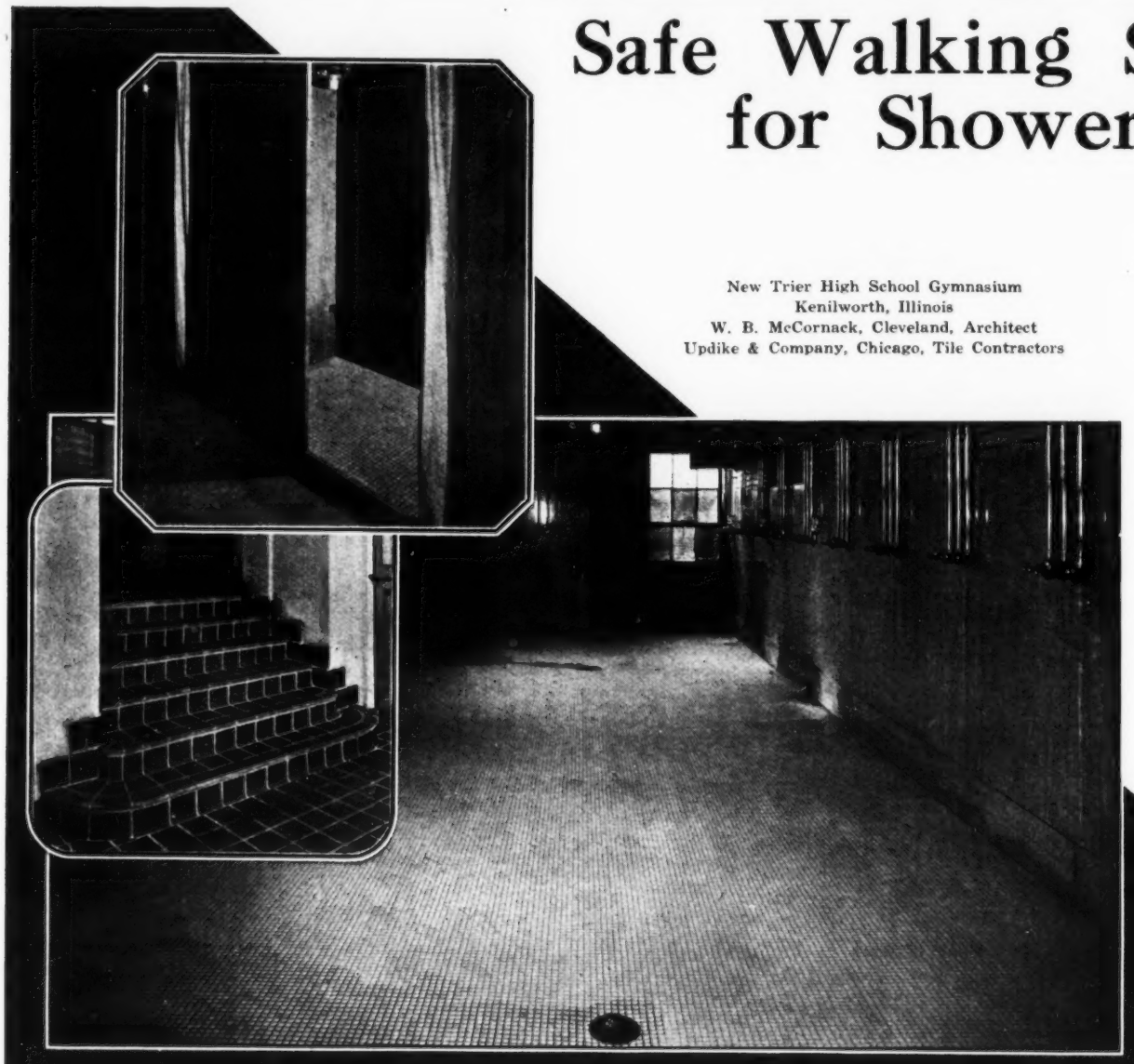

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(Concluded from Page 72)

—Sunset Lumber Co., v. Smith, 272 Pacific reporter, 1068, Calif. App.

An admission in answer to a materialman's suit for materials in constructing a school, that the school district was a duly organized district and a public corporation, is held an admission that it was a state agency, without further proof.—Sunset Lumber Co., v. Smith, 272 Pacific reporter, 1068, Calif. App.

Materials furnished in constructing a school are to be paid for when delivered, in the absence of an express allegation of time payment (Calif. civ. code, §1657).—Sunset Lumber Co. v. Smith, 272 Pacific reporter, 1068, Calif. App.

School-District Taxation

A statute authorizing school districts to agree to pay their proportionate part of public improvements is held unconstitutional as an appropriation of the school fund to other than school purposes (Ky. state supplementary statutes of 1928, §3563; the constitution, §184).—Wilson v. Board of Education of City of Russellville, Logan county, 11 Southwestern reporter (2d) 143, 226 Ky. 476.

A school district's contract incurring liability in excess of the current revenue in hand or legally levied is void, unless it is authorized by vote (Okla. constitution, art. 10, §26).—Board of Education of School Dist. No. 47½ of Garfield county v. Jacobs, 272 Pacific reporter, 360, Okla.

A school district cannot create a contractual obligation in excess of the constitutional limitation for the purpose of submitting such a question to the voters (Okla. constitution, art. 10, §26).—Board of Education of School Dist. No. 47½ of Garfield county v. Jacobs, 272 Pacific reporter, 360, Okla.

A statute authorizing the issuance of bonds to acquire school sites is held to authorize bonds to improve the sites (Idaho laws of 1921, c. 215, §57 as amended by the laws of 1927, c. 121).—King v. Independent School Dist. Class A, No. 37, 272 Pacific reporter, 507, Idaho.

Bonds issued to pay for public improvements are held void (Ky. supplementary statutes of 1928, §3563, of the constitution, §184.—Wilson v. Board of Education of city of Russellville, Logan county, 11 Southwestern reporter (2d), 143, 226 Ky. 476.

A statute authorizing the issuance of bonds to build or provide schoolhouses is held to cover the moving of bungalows to make the site available (Idaho laws of 1921, c. 215, §57 as amended by laws of 1927, c. 121).—King v. Independent School Dist. Class A, No. 37, 272 Pacific reporter, 507, Idaho.

After a school-bond election, regulatory statutes will be held directory unless failure to comply therewith has affected the result (Idaho laws of 1921, c. 215, §42, section 14, as amended by the laws of 1927, c. 259, and section 57, as amended by the laws of 1927, c. 121).—King v. Independent School Dist. Class A, No. 37, 272 Pacific reporter, 507, Idaho.

A city board of education is held authorized to issue refunding bonds without the assent of the voters (Ky. constitution, §158).—Wilson v. Board of Education of city of Russellville, Logan county, 11 Southwestern reporter (2d), 143, 22 Ky. 476.

The county it not liable for money collected by the county treasurer belonging to the common school district and erroneously apportioned to another district.—Board of Commissioners of Carter county v. Joint School Dist. No. 34 in Love and Carter counties, 272 Pacific reporter, 468, Okla.

Teachers

A county board of education must elect a teacher nominated by a subdistrict trustee, where qualified at the time of meeting for the selection of the teacher.—Rice v. Gilliam, 11 Southwestern reporter (2d), 431, 226 Ky. 613.

A contract with a common school district for the services as teacher executed prior to making and approval of estimate therefor is void (Okla. constitution, art. 10, §26; complete statutes of 1921, §9699).—School Dist. No. 36, Love county v. Pippin, 272 Pacific reporter, 455; same v. Reasoner, 272 Pacific reporter, 457, Okla.

Under a code terminating a teacher's contract on suspending a school for disadvantageous location or other cause, the term "other cause" is not confined to disadvantageous location or like (Ohio general code, §7730).—Board of Education of Madison township, rural school district, Perry county v. Waits, 164 Northeastern reporter, 228, 119 Ohio, 310.

Evidence supported the court's finding that there was not selection of the teacher by the county board before the teacher nominated by a subdistrict trustee became qualified.—Rice v. Gilliam, 11 Southwestern reporter (2d), 431, 226 Ky. 613.

Pupils

One signing a contract to transport pupils waived the right to a formal charge and hearing before discharge pursuant to a provision reserving the right to terminate the contract at any time (Iowa code of 1924, §4182).—Black v. Consolidated Independent School Dist. of Thayer, 222 Northwestern reporter, 350, Iowa.

A school board's reservation of the right to terminate a contract for the transportation of pupils at any time is held valid (Iowa code of 1924, §4182).—Black v. Consolidated Independent School Dist. of Thayer, 222 Northwestern reporter, 350, Iowa.

THE SCHOOL PRINCIPAL

"As the teacher is, so is the school," might be supplemented by adding, "and the principal makes the teacher." The principal becomes the most important mediary for better vision, greater enthusiasm, and a more lucid understanding of all types of problems involved. His is the opportunity for guidance of teachers to higher levels of achievement, and of pupils to greater possibilities of attainment. Through scientific supervision of his own building, the efficient, well trained, ambitious principal is able to put into reality a program long advanced theoretically, namely, differentiated courses of study for differentiated types of ability. There is no greater opportunity anywhere, it seems to me, for the principal as a supervisor to serve society more completely and more to advantage than is offered through this differentiated program.—Stanley H. Wolf, Principal, Newark, N. J.

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The school authorities of Sioux City, Iowa, require the use of uniform tablets in all the elementary schools. The committee of teachers headed by Supt. M. G. Clark, some years ago prepared the exact specifications for the tablets. For some years, only ruled tablets were permitted, but during the present year a new unruled tablet has been adopted for use in arithmetic and other work which can better be done on an unruled surface.

The board of education receives bids annually from tablet manufacturers. The sales are not made to the board of education but to local wholesalers and jobbers, who distribute them to the retail dealers.

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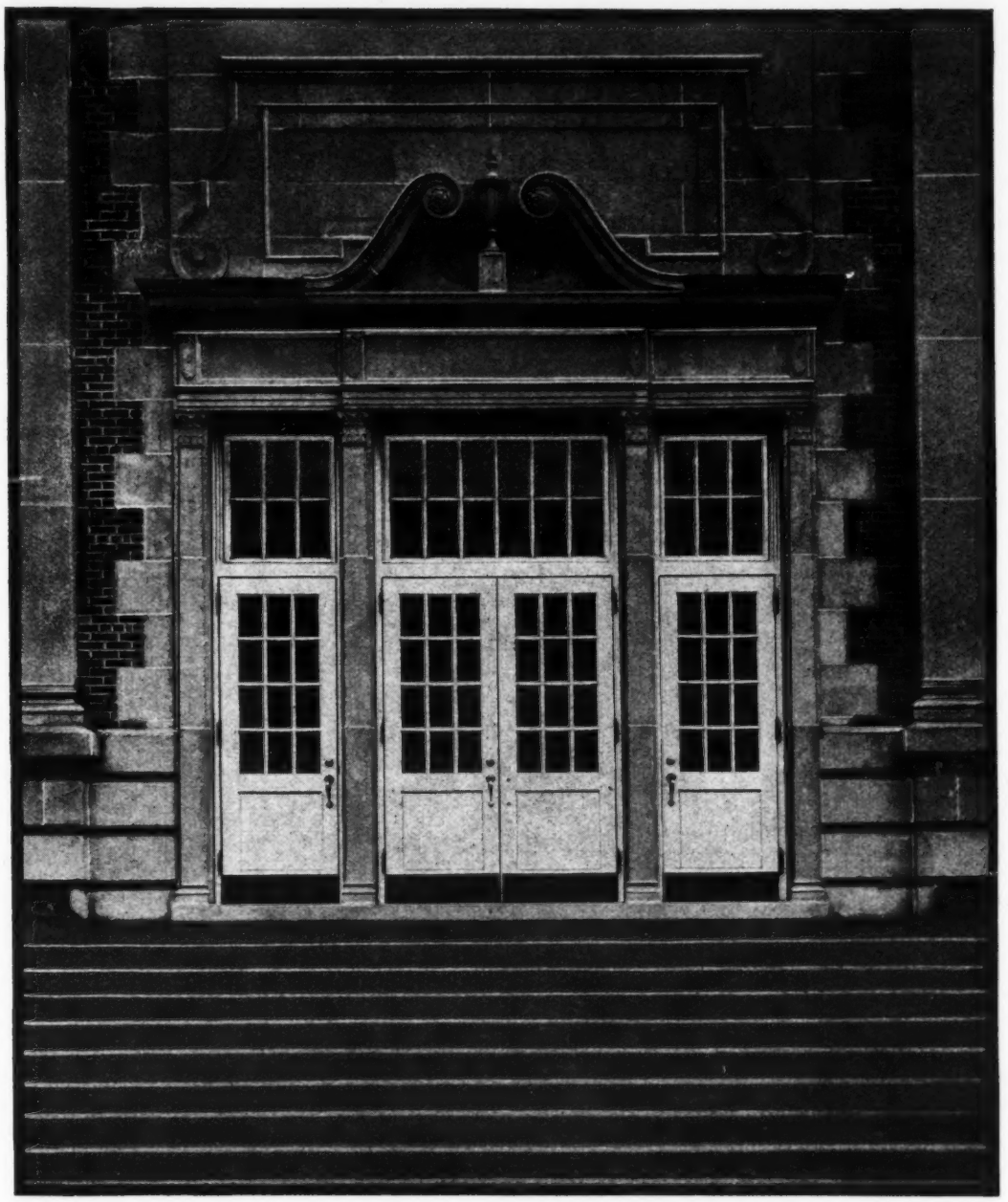

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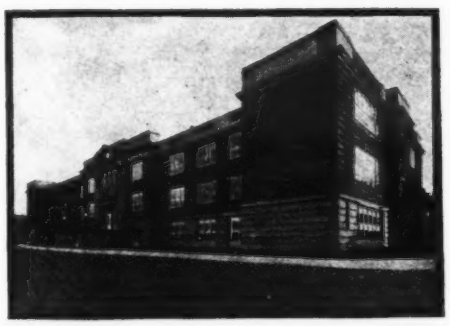

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Cooperation in Executing the Plans and Policies of the Schools

In school planning and execution, as in every phase of administrative procedure, there is ample opportunity for good work in proper planning and for efficiency in carrying out the policies of those in charge as administrators. In schoolwork it is necessary to secure the cooperation of all teachers, supervisors, principals, and administrators in meeting the various problems and in overcoming difficulties. In short, it is equally as important to follow the plan as it is to plan the work.

Supt. M. R. Keyworth of Hamtramck, Mich., in the November issue of The Hamtramck Public School Bulletin, discusses the subject in a very interesting manner. He writes:

"In every organization there are many possibilities for tremendous waste due to improper planning and to inefficiently executing that which is planned. Germane to the whole subject of efficiency is the adequate comprehension of what is implied in both planning and executing.

"The proper solution of a specific problem is found in terms of the purpose through which the problem arises by considering all factors, near and remote, which are significant and pertinent to it, by giving each factor its true evaluation, and by striking a balance of the sum of all.

"Meaningful experience is the indispensable element of planning. Only by experience can an individual be familiar with and correctly evaluate all factors. Of course, experience must be meaningful in order to make true evaluation possible. Thus, it becomes necessary to be familiar with the objectives to be achieved and with the methods and technics requisite for their achievement. Progress is made by those whose knowledge is workable.

"Research and experimentation are in reality technics for increasing meaningful experiences. The results of experimentation and research are used to complete a chain of pertinent experiences relating to a specific problem. For illustration, let it be assumed that six elements are required to solve a problem, a, b, c, d, e, and x (f). a, b, c, d, and e are known. x is not known but the qualities, which x must have to meet the unattained purpose that creates the problem, are known. By research, experimentation, and trial, an x is found that removes the obstacle found in the problem. It satisfies the desire which the problem impeded and the original purpose is met. x, the unknown, becomes f, the known, as soon as the solution is found. f now becomes a meaningful experience which is useful in the mental processes required to make a workable plan.

"If this is a correct explanation, then what is this vague term, intelligence, and what is meant by creative intelligence? Intelligence is the ability to utilize, in terms of purpose, all pertinent factors near and remote, truly evaluated, with the resultant response. Unintelligence is indicated by the response to a present stimulus without giving proper consideration to remote, but significant, factors. The response is inadequate and usually in error. Unintelligence is blind and impulsive action; intelligence is foreseeing what is likely to happen and planning accordingly. Unintelligence says, 'It didn't occur to me,' 'I didn't plan on this.' Intelligence says, 'In order to achieve this we must do thus and so.' Unintelligence is unduly swayed by unimportant elements, overweighted because of nearness. Creative intelligence rests on vision. But vision rests on the possibilities of combination of meaningful experiences.

"Creative intelligence consists of bringing one or more new elements into a pattern of response and by the combination of the new element with the old, an entirely new pattern or patterns of response results. All new ideas are composed for the most part of old ones recombined with one or at most but a few new elements. Each 'new model' consists mainly of the old model with but a few improvements added. Even the 'entirely new car' is but a combination of improvements with only here and there something that is really new. Each year some new element is added. In ten years a car is produced that in reality is much changed although most of the basic principles are retained —the spark plug, the internal-combustion engine, the differential, the sliding gear transmission, the spring suspension, and the rear-axle drive.

"Obviously, planning consists of working over meaningful experiences, overcoming obstacles by recombining experiences or by experimenting to find ways for overcoming them. It is a mental trial-and-error process. The final test of the plan is actual trial to determine whether or not it actually achieves the desired objectives of the original purpose.

"In an organization, those who plan may not carry out the plan after the plan is completed. Executing a plan requires certain types of intelligence. Unless the objectives are known and the methods and technics requisite for the achievement of the objectives are mastered, execution is impossible. Frequently the person

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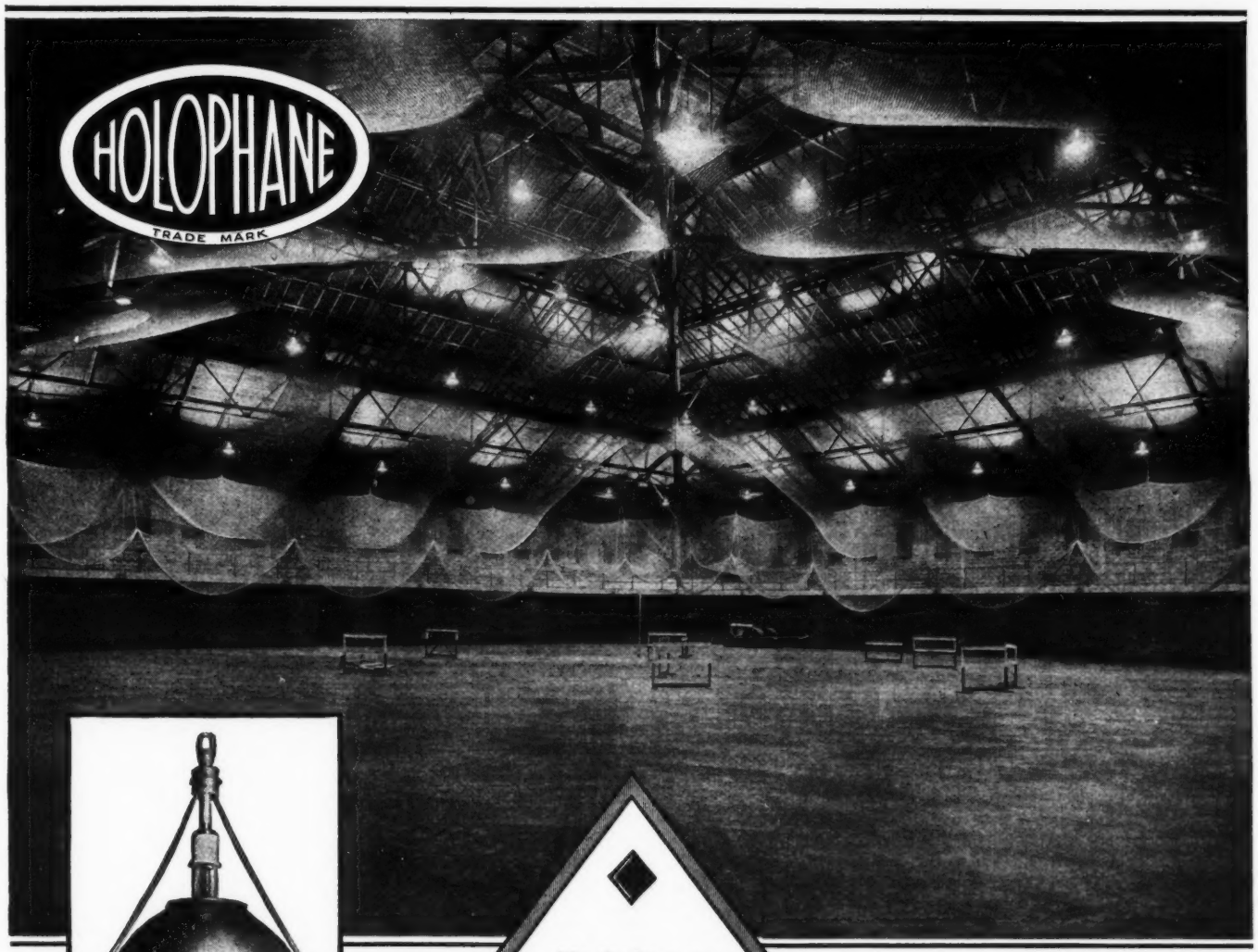

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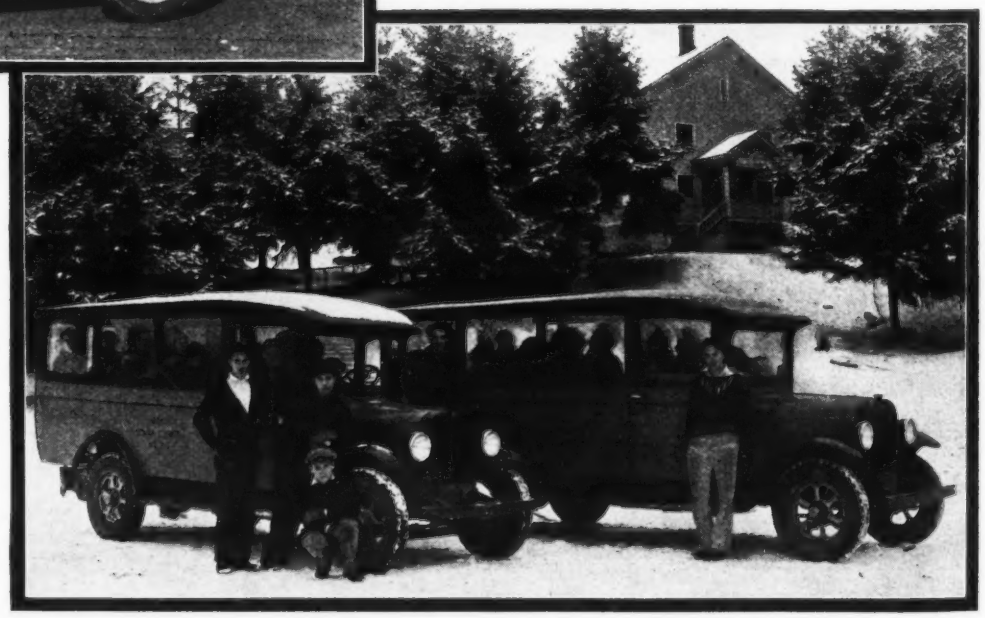

IN the complete line of Dodge Brothers School Buses you will find sizes to fit the needs of any school. You can purchase a complete school bus—chassis and body—all Dodge. Prices are surprisingly low. Increasing sales reflect the steadily growing preference for Dodges.

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(Concluded from Page 76)

charged with the execution of the plan is swayed and diverted by irrelevant and insignificant suggestions. Again, it is a case of the unimportant present overbalancing the important remote. Once a plan has been properly formulated it must be carried out unless adequate evidence is secured which justifies an alteration. Too frequently teachers are carried away by minor suggestions and hints which, when properly evaluated, are not nearly as significant as they first appear. Worse still, such variations frequently retard or even destroy the original plan.

"True it is that improvement is possible only by change, but such changes need to be made by experimentation and trial. They should be adopted only when the new can be proved better than the old. Change is requisite for progress but change is usually expensive. Change is justified only when, after experimentation and trial, the new is found to be better than the old. Therefore, those charged with putting adopted plans into effect have the major responsibility of following adopted plans and the minor responsibility of making suggestions for improvement.

"'Working the plan' is just as important as 'planning the work.' Both are essential in any organization consisting of personnel who have specialized work to do."

Why Establish a High-School Store?

D. Earl Zook, Formerly Principal, Nokomis Township High School, Nokomis, Ill.

I want to tell this story for I know that it will be of much interest to the practical schoolman who must obtain money for many needed things for which the board of education cannot spend the people's money. I know, too, that it will be of value to the thrifty board of education who likes to see the school help itself in a financial way when possible.

When the principal of a high school establishes a store, even though it is by the unanimous consent of the school board, he places himself in a position where he will be severely criticized. I learned this much after the experience of a period of years. A school store is bound to incur for the principal the enmity of local merchants who have depended upon the school trade for a part of their profits.

In the fall of 1923, I took charge of the Nokomis Township High School. The school then had an enrollment of less than 200 students, and the building was situated a half or three fourths of a mile from the business center of the town of Nokomis. School had been in session only a few days when I found that students were inclined to forget books and various minor items of supplies, and to request permission to make trips to town to purchase what they immediately needed. My predecessor had apparently dealt with this problem in a minor way, because I found that pencils were kept in stock in the office and candies were sold in the building. The sales from the candies in the previous years had netted about $40 annually.

Our First Stock

After I had convinced myself of the necessity of selling certain necessary supplies to the pupils, I laid the matter before the school board and after some discussion obtained permission to fit up a store in a room adjacent to the office. A small stock of pencils, pens, candy, ice cream, and soda water was purchased. A student was employed to care for the store during the 40 minutes of noon recess. The boy received 25 cents per day out of the earnings of the store. The candy was bought from local merchants who charged $1 per box and later 80 cents per box, for candy which retailed at $1.20. The ice cream was bought locally at $1.25 a gallon and later at $1 a gallon. The soda water was bought locally at 65 cents per case. For pencils we paid 50 cents per dozen, but later we bought the same standard brands as low as $4.10 per gross. Thus, at the beginning, all stock was bought locally and the merchants were very much pleased with the business they received from us.

Even though the store was not started until six weeks after school began, it showed a profit of $360 during the first year. The sum was spent for the library, which was of the kind usually found in a high school of this size and consisted of 700 more or less useful books. Our profits bought over 200 very-much-needed books and enabled us to subscribe to about 20 magazines.

The First Protests

At the beginning of the second year we increased our stock by $150 and added such items as were needed by students. It seemed to us that some of the necessities were being sold at exorbitant prices. We found that we could supply the boys with gymnasium clothes for one half the price charged by certain merchants and still make a profit of 10 per cent. We sold gymnasium shirts for 40 cents which cost 75 cents downtown. We found that the candy which we were marketing could be bought from a broker at 70 cents a box. A store charged 10 cents for a packet of 30 sheets of theme paper, and we found that by dealing directly with a wholesale paper house, we could sell 80 sheets of the same size and quality of paper for 10 cents.

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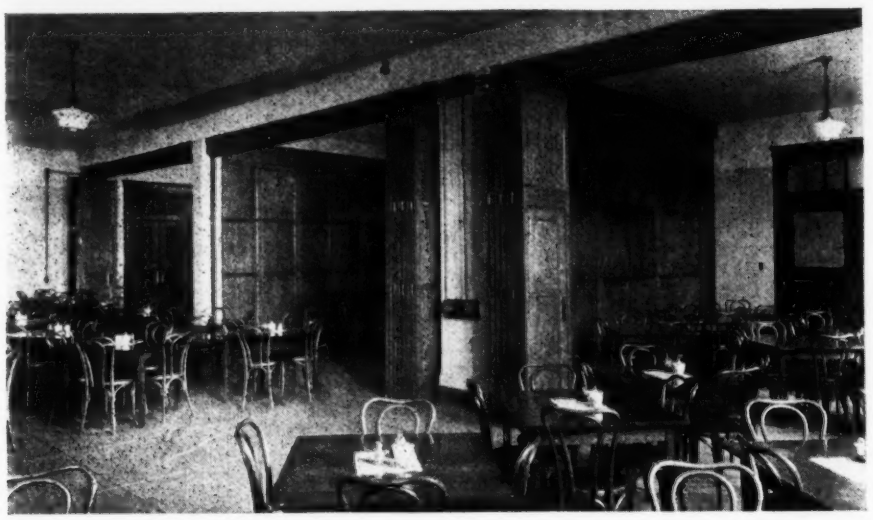
have a positive Roller Chain Drive



CIRCLE A Folding Partitions are a complete improvement over any folding partitions on the market. Mechanically operated by roller chains—not ropes or cable—hence the drive is positive.
Patented hanging method insures easy operation. A special sealing system at floor, walls and ceiling effectively stops noise, odors and light. Doors are thoroughly insulated against sound.
There are no dirt-harboring tracks with Circle A Folding Partitions. All workmanship and materials are in keeping with highest type of cabinet work. Furnished in type of construction suitable for any school, hall or other requirement. Send for details.
Ask also for information on Circle A Rolling Partitions.

CIRCLE A PRODUCTS CORPORATION
600 South 25th Street, Newcastle, Ind.

CIRCLE A FOLDING PARTITIONS
··Sound Insulated··

Naturally, the fact that we were underselling the local stores caused criticism and a protest by the local merchants. The school board after hearing both sides of the case decided that the store should sell anything needed by the students in the way of supplies. Candy should be sold at standard prices, but school supplies should be sold as near cost as possible. The business of the store increased in such a way that it was necessary to hire a second student to wait on the trade. I found that the boys who were caring for the store were inclined to act as if the stock were their property and that they occasionally ate candy and other good things without permission. In arranging for the pay of boys, I accordingly fixed their wage at 25 cents per day in cash and 10 cents in candy or other good things to eat.

Widening the Store Service

At the close of the second year the sum of $480 was taken out of the earnings for special school purposes, and $150 was invested in additional stock. More than 300 books were purchased for the library and the number of magazines was increased to 40. We also paid for setting the leg of a football player who had been injured in a school game, and we furnished books and gymnasium clothing to a number of students who could not afford to buy them.

At the beginning of the third year we added to our stock a supply of fountain pens and padlocks for the school lockers. Again the wrath of the merchants descended upon the school store and the principal of the school. We sold standard makes of pens, like the Conklin and others, on narrow margins. The most expensive $7 pens were sold for $5 and the cheaper pens were sold at proportionate reductions. The best of padlocks brought us 90 cents to $1. Again the school board heard the protests of the merchants, but refused to take action beyond approving the continuance of the store.

Selling Old Books

At the close of the third year we spent over $600 for special school purposes and invested more than $300 in a stock of secondhand textbooks. We decided to handle used books only after finding that the local stores doubled their money or more, in handling books which students brought to them. In one case a merchant offered a book for $1 for which he had paid 30 cents. We added over 400 volumes to the library and increased our magazine list to 50. In addition to this, the profits of the store furnished all the office supplies for the school, including stamps, stationery, and paper.

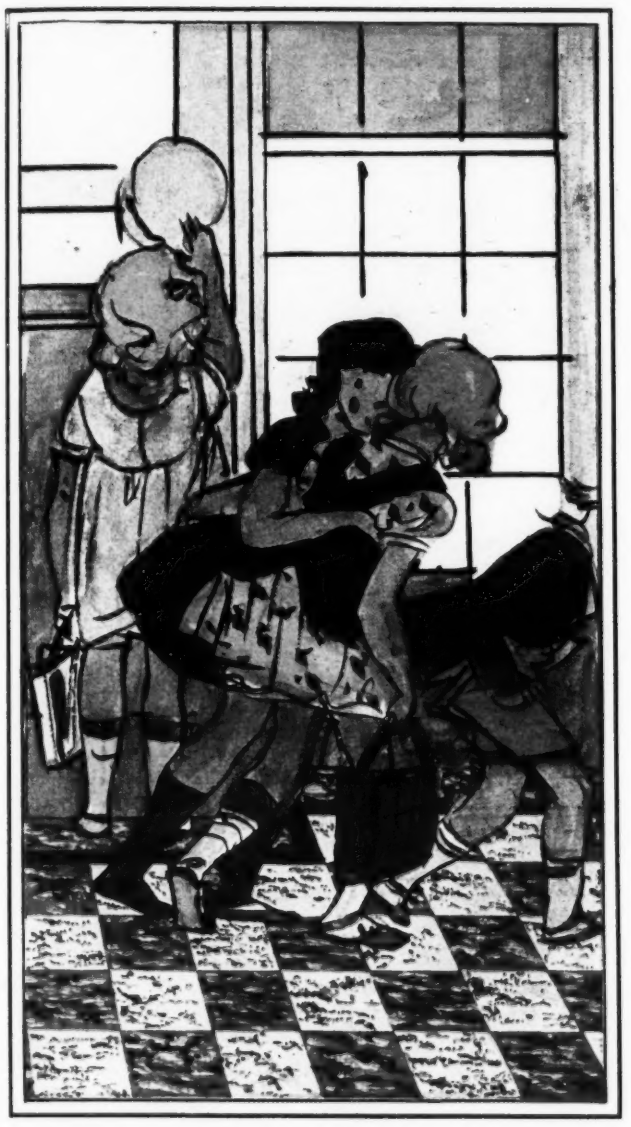
In the fourth year gymnasium shoes and other necessities were added to the stock of the store. The shoes were sold for a little more than one half of the retail price which prevailed in the town. We did not market girls' gymnasium clothes because we found that the merchant who sold them was charging only a reasonable margin of about 15 per cent. During the fourth year we also added new textbooks which we sold at 10 per cent above the purchase price. We found that the local stores were selling them for 25 per cent above the wholesale prices, even though the school law prohibited an increase of more than 15 per cent. We found that this law as well as the law which prohibits school-board members from selling to the school was entirely disregarded.

During this year more than $1,000 was spent for the school and some $200 was added to the total value of the stock which we carried. The board furnished $800 for the purchase of secondhand books. In buying these books we followed the rule of stamping the date and the price in the book and requiring the seller to sign his name. This procedure proved very useful in cases where students sold books independently of the store. During the year we increased our library by 800 volumes and brought our list of magazines up to 80. We furnished rackets and balls for tennis and balls for golf. A radio and other equipment were bought for the school.

The Store Closed

In the beginning of the fifth year the store was running in splendid shape, and we expended more than $1,500 for school purposes and added to the stock which we carried. The enrollment in the school had increased to nearly 300, and we were making good use of our experience to buy to advantage. In April the board requested the principal to publish a detailed statement of the income, expenditures, and profits of the store. The excellent showing which the statement made proved to be the undoing of the store. The local merchants made the store the issue of the school election. The candidates who were opposed to the store stated, however, that they approved of my administration of the school in everything but the store. The campaign was very heated because I defended the things I had done with the full approval of the board. When the new school board came into office, the announcement was made that the store would be discontinued and that the board would not renew my contract.

Thus, an interesting experiment of five years came to an end. The new board continued the sale of books, but disposed of the remaining goods to the old janitor of the school who used the stock to start a small store across the street from the school.



Unwillingly to School

CAN it be that the historic attitude of children towards school is undergoing a change? That attitude which is summed up in the oft-quoted lines:—

"And then the whining school-boy, with his satchel
And shining morning face, creeping like snail
Unwillingly to school."

Today, parents and teachers are aware of a certain lack of sincerity in the "unwillingness." Not that healthy, high-spirited boys and girls hadn't rather play than work. Yet somehow it seems that much of the old bitter antagonism has evaporated. Why?

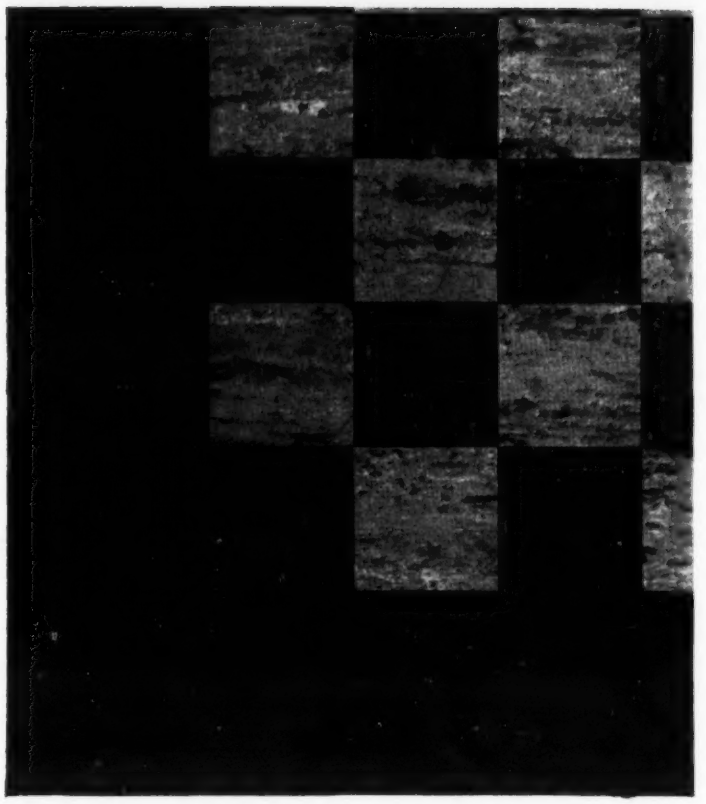
More reasonable hours. The abolition of "cruel and unusual" punishments. New methods of pedagogy which make schoolwork easier and more interesting. Comfortable, cheerful, livable school buildings.

In this last improvement, Bonded Floors have played a creditable part. Consider the many points of superiority of these modern resilient floors as contrasted with the hard, drab-looking school floors of yesterday. Instead of noisy clatter . . . *quiet.* Instead of cold, unyielding surfaces . . . warmth and comfort underfoot. In place of bare ugliness . . . attractive, restful colors. Yet such floors cost no more than other types. They are easier to clean, and do not require constant and expensive refinishing. In thousands of schools, they have proved their ability to stand up under heaviest traffic conditions.

Now let's assume that you have decided on resilient floors of this type for your school. A Bonded Floors representative calls and shows you samples of cork-composition materials. A few of several dozen standard color effects obtainable in *Sealex* Linoleum and *Sealex* Treadlite Tiles are illustrated on the next page. An interesting point is that these units may be combined in hundreds of different ways. Lay them from rolls and you have a solid colored floor for your class rooms and corridors. Cut them in strips and tiles and you have a handsome, hand-made floor with an ornamental border—like

(Continued on next page)

The days of dreary drudgery are over—Schools are now pleasant places to work in



SCHOOL FLOORS

that are *colorful-comfortable and durable*

(Continued from preceding page)

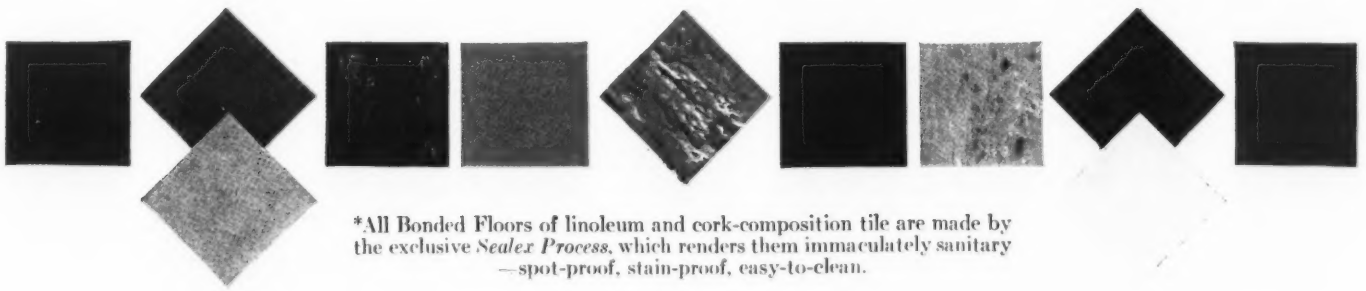
the one illustrated above. On request, the Bonded Floors designing staff will submit for your approval patterns as simple or elaborate as you desire, suitable for any school area.

You'll find Bonded Floors Company a pleasant organization to do business with. Our service takes care of everything. We will cooperate in choosing the proper type of floor, aid in working out the design. We will put you in touch with an experienced, trustworthy distributor near you, who will install our materials* correctly.

We have selected and trained our authorized distributors with the sole idea of delivering satisfactory floors. Our faith in their workmanship and in *Sealex* materials is evidenced by our Guaranty Bond against repair expense.

Call upon us for any service or information you may require in connection with floors—no obligation, of course. You'll be interested in our authoritative booklet on school floors, prepared by architects. May we send you a copy?

BONDED FLOORS COMPANY, INC.
Division of Congoleum-Nairn Inc.
General Office: Kearny, N. J. *Authorized distributors in principal cities*



*All Bonded Floors of linoleum and cork-composition tile are made by the exclusive *Sealex Process*, which renders them immaculately sanitary —spot-proof, stain-proof, easy-to-clean.

BONDED FLOORS

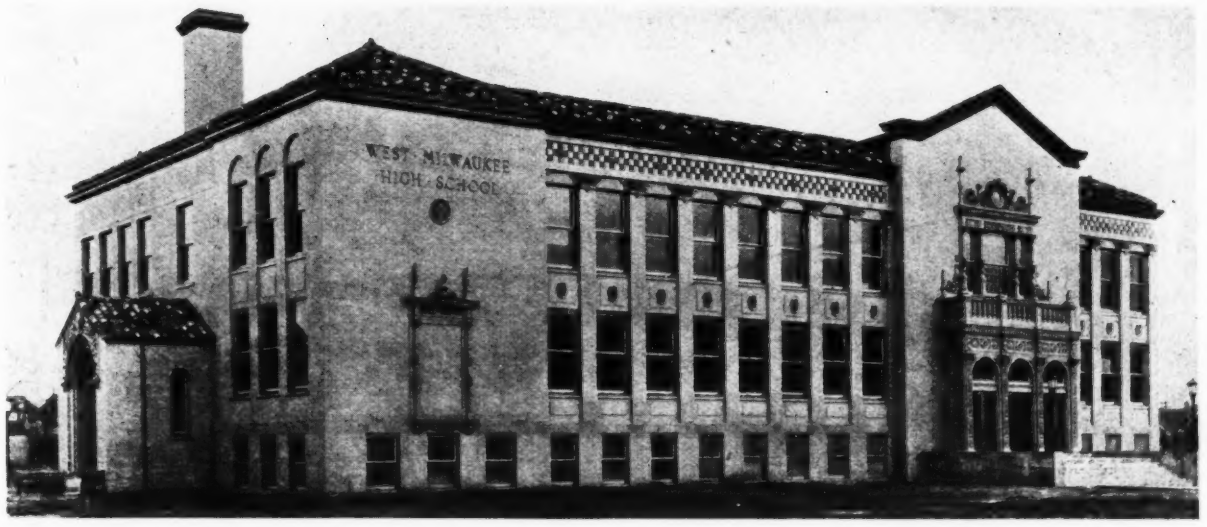
Resilient Floors Backed ISSUED BY U.S. FIDELITY AND GUARANTY CO. *by a Guaranty Bond*

..."the best floor treatment on the market"

CAR-NA-VAR

TRADE MARK REG. U.S. PAT. OFF.

THE PERFECT FLOOR TREATMENT



Martin Tullgren & Son, Architects

"CAR-NA-VAR IS USED AS A FLOOR TREATMENT ON ALL FLOORS IN THE WEST MILWAUKEE HIGH SCHOOL. WE CONSIDER IT THE BEST FLOOR TREATMENT ON THE MARKET. IT KEEPS LINOLEUM IN EXCELLENT CONDITION AND CUTS DOWN THE COST OF MAINTENANCE."

MATTHEW BARKLEY, Principal.

WHY IS CAR-NA-VAR A BETTER FLOOR TREATMENT?

In CAR-NA-VAR both varnish and floor wax are COMBINED into the perfect floor treatment. For, in CAR-NA-VAR the good features, of both the well known finishes, are preserved—and the disadvantages eliminated. The varnish gums add body, long wear and a brilliant varnish-like lustre. The wax content contributes pliability and prevents marring or cracking.

OTHER CAR-NA-VAR FEATURES

Easily applied with a mop—no skill required.

1. **ECONOMICAL**—Less than 1¢ per sq. ft. covers yearly material maintenance cost.
2. **DURABLE**—2 to 3 times more durable than varnish or floor wax.
3. **EASILY APPLIED**—applied with a mop—no skill required.
4. **EASILY CLEANED**—a damp cloth will quickly clean the floor.
5. **ATTRACTIVE**—The floor always looks clean and well polished.

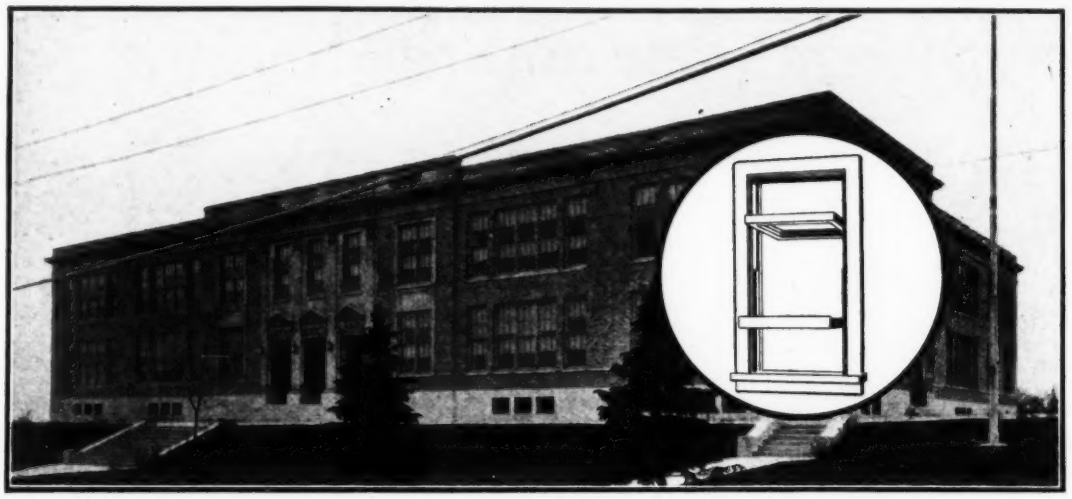
CAR-NA-VAR is shipped in containers convenient to use.

Continental Chemical Corp.

Watseka 219 Scott Street Illinois

BRANCH OFFICES AND WAREHOUSES

Chicago New York Minneapolis Los Angeles Boston
Seattle Philadelphia Indianapolis Toronto Lansing
Detroit Oklahoma City Houston Washington, D. C.



Wynnewood Road School, Wynnewood, Pa. Ralph E. White, Architect, Philadelphia, Pa

Bring the Springtime Into the Schoolroom

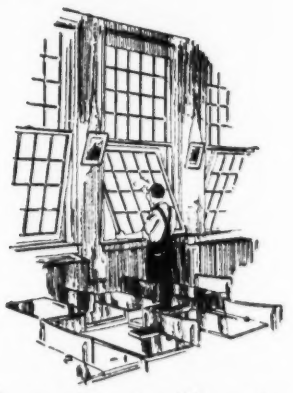
When days are balmy, controlled fresh air ventilation without draft, brings the springtime into the rooms of this school. Williams Reversible Window Equipment permits windows to be tilted at any angle, giving the widest possible opening or the merest crevice as desired.

THE WILLIAMS PIVOT SASH COMPANY
E. 37th St. at Perkins Ave., Cleveland, Ohio
For twenty-five years manufacturers and installers of Reversible Window Equipment.

WILLIAMS REVERSIBLE
WINDOW EQUIPMENT
Clean Your Windows from the Inside

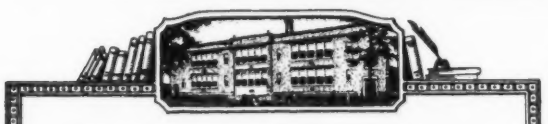
Draftless Ventilation

The tilted window deflects the air upward into the room, eliminating a dangerous draft.



Economy in Cleaning

This safe and convenient method of cleaning enables windows to be washed more frequently and at a lower cost than by outside cleaning.



Superintendents

—Supt. John E. Smith of Webster City, Iowa, has been reelected for another year.

—Supt. M. M. McIntire of Audubon, Iowa, has been reelected for another two-year term.

—Supt. Luther Landstrom of Madrid, Iowa, has been reelected for his eleventh consecutive term.

—Supt. W. J. Ryan of Gilbert, Minn., has been reelected for another year.

—Supt. C. M. Ross of Forest City, Iowa, has been reelected for another year.

—Supt. B. C. Berg of Newton, Iowa, has been reelected for another term of three years, with a substantial increase in salary.

—Supt. H. J. Blue of Carlinville, Ill., has been elected president of the South-Central Illinois Teachers' Association.

—Mr. E. J. McKean of Tomah, Wis., has been elected superintendent of schools at Brookings, S. Dak.

—Supt. B. C. Shankland of Cadillac, Mich., has been reelected for a fifth consecutive term, at a salary of $4,500.

—Mr. John P. Price, formerly principal of the high school, has been elected superintendent of schools at Butler, Ind.

—Supt. B. R. Jones of Spencer, Iowa, has been reelected head of the schools for a two-year term, at a salary of $3,500.

—Mr. F. J. Birney of Pullman, Wash., has been elected superintendent of schools at Chinook, Mont.

—Supt. W. T. North of Corydon, Iowa, has been reelected for another term of two years.

—Mr. John W. Thalman, superintendent of the township high school at Waukegan, Ill., has been reelected for another year.

—Supt. J. G. Roach of Celeste, Tex., has been reelected for a third consecutive term.

—Mr. Grant Gramphossman of Cedar Falls, Iowa, has been elected superintendent of schools at Allison.

—Supt. T. E. Huggins of Rotan, Tex., has been reelected for another year.

—Supt. R. C. Graewin of Boscobel, Wis., has been reelected for another year.

—Supt. M. E. Hinderks of Ogden, Iowa, has been reelected for a new three-year term.

—Mr. R. G. Smith has been elected superintendent of schools at Clarence, Mo.

—Supt. E. L. Stewart of Berrien Springs, Mich., has been reelected for another year.

—Supt. H. A. Tweed of Marlette, Mich., has been reelected for another year, with a substantial increase in salary.

—Supt. M. O. Hall of Comstock, Mich., has been reelected for a new two-year term, with a substantial increase in salary.

—Miss Mary O'Keefe of Ocean Springs, Miss., has been elected superintendent of schools to succeed S. A. Chandler.

—Supt. B. C. Schulkey of Olney, Tex., has been relected for another year.

—Mr. O. A. Blackney of Glen Elder, Kans., has been reelected for another year, with an increase in salary.

—Mr. O. L. Pierce of Hannibal, Mo., has been elected superintendent of schools at Palmyra, to succeed L. D. Ash.

—Supt. James G. Johnson of Charlottesville, Va., has been reelected for a new term of four years, beginning with July 1. Mr. Johnson has been head of the local school system for the past twenty years.

—Mr. J. C. Werner has been reelected as supervising principal of the schools at Corapolis, Pa.

—Supt. M. G. Cleary of Harper, Kans., has been reelected for another year.

—Supt. B. W. Robinson of Springfield, Mich., has been reelected for a three-year term, with an increase in salary.

—Mr. Hubert Shinn, formerly principal of the high school at Hart, Mich., has been elected superintendent of schools, to succeed H. L. Bleecker.

—Mr. H. J. Loper, formerly superintendent of schools at Oxford, Mich., has been appointed as principal of the Lincoln Junior High School at Pontiac.

—Mr. Stanley H. Rolfe has been appointed assistant superintendent of schools at Newark, N. J., succeeding Mr. E. K. Sexton. Mr. Rolfe came to Newark in 1912, and had been principal of the Wilson School since 1926.

—Supt. J. S. Hilliard of Estherville, Iowa, has been reelected for another year.

—Mr. R. H. Watson has been elected superintendent of schools at King City, Mo., to succeed Mr. C. A. Kitch, Jr.

—Mr. C. H. Keho has been elected superintendent of schools at Coin, Iowa.

—Supt. E. L. Dressler of Ellinwood, Kans., has been reelected for another year.

—Mr. Wayne Starr of Monroe, Oreg., has been elected superintendent of schools at Harrisburg, to succeed Mr. A. H. Weber.

—Mr. F. E. Lurton of Aitkin, Minn., has been elected superintendent of schools at Bertha, to succeed Mr. E. A. Quist.

—Supt. E. P. Clarke of St. Joseph, Mich., has been reelected for his thirtieth consecutive term.

—Supt. S. J. Hansen of Harmony, Minn., has been reelected for a third term.

—Mr. F. K. Young of Owatonna, Minn., has been elected superintendent of schools at Milbank, S. Dak.

—Supt. O. E. Domain has been reelected as head of the schools at Fulda, Minn.

—Supt. Clifford Mack of Shellsburg, Iowa, has been reelected as head of the Shellsburg consolidated school.

—Mr. Bartley Ogden, of Akron, Iowa, has been elected superintendent of schools at Chatsworth.

—Supt. R. H. Beall of Bellevue, Iowa, has been reelected for the ensuing year.

—Supt. James M. Nation of Erie, Kans., has been reelected for another year.

—Supt. J. H. Morrison of Cairo, Ga., has been reelected for a fourth consecutive term.

—Mr. B. M. Greer has been elected superintendent of schools at Athens, Ga., to succeed G. G. Bond.

—Supt. L. D. Halsted of Tecumseh, Nebr., has been reelected for a seventh consecutive term.

—Supt. H. G. Secrest of Rankin, Tex., has been reelected for a new two-year term.

—Supt. L. McCartney of Hannibal, Mo., has been reelected for his twenty-first consecutive term.

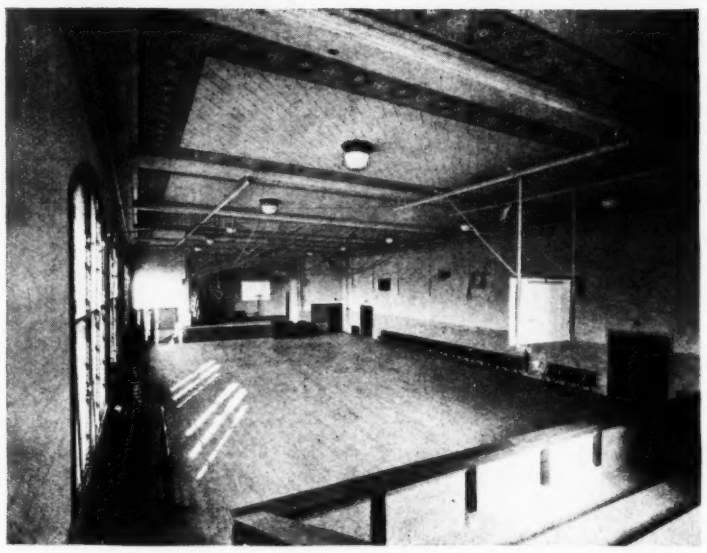
—Supt. L. O. Morford of Ireton, Iowa, has been reelected for another year.

—Supt. L. R. Rice of Sherwood, N. Dak., has been reelected for another year.

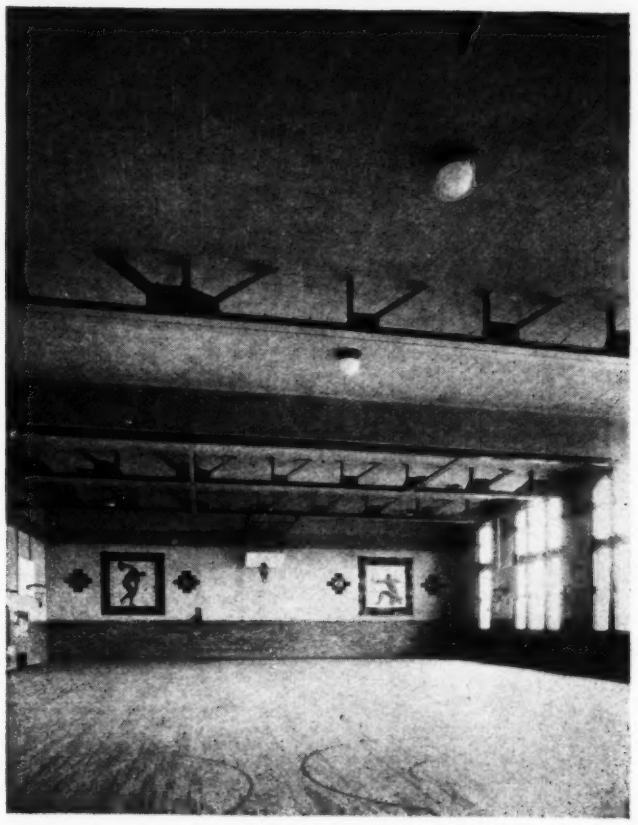
—Supt. Haddon Johnson of Danville, Va., has been reelected for a four-year term.

—Supt. Frank Wagaman of Pawnee Rock, Kans., has been reelected for another year.

(Continued on Page 84)



Here is the gymnasium of the Royal Oak High School, Royal Oak, Mich., with its Acousti-Celotex ceilings.



The Acousti-Celotex ceiling in the gymnasium of the Quarton School, Birmingham, Mich., shows interesting use of stencil decoration.

Less noise in your gym

Modern schools find it most desirable to install Acousti-Celotex ceilings to control sound

EVERY physical "ed" class . . . every basketball game . . . every event scheduled for your gymnasium can be more enjoyable. For school authorities have found a way to subdue disturbing racket.

This way is through the use of Acousti-Celotex. This remarkable material absorbs noise . . . deadens the most disturbing sounds . . . and still has the property of making every spoken word clearly audible in every part of a room.

Acousti-Celotex today provides proper hearing conditions in school auditoriums. It reduces the din in corridors, cafeterias and manual training shops, and helps create a quiet atmosphere for study and recitation in class rooms.

For decoration

Acousti-Celotex has decorative as well as acoustical qualities. It comes in a natural tan color which is attractive in itself. And it can be painted or stenciled as desired without harming its sound-controlling properties. The durable and permanent units are easily installed in old buildings or new.

This booklet tells more

We would like to have you read more about Acousti-Celotex. And if you are interested, send for our new folder, "Better Study Conditions in Schools". The coupon brings your copy free.

The word
CELOTEX
(Reg. U. S. Pat. Off.)
is the trademark of and indicates manufacture by
The Celotex Company, Chicago, Illinois

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Mills: New Orleans, La.
Branch Sales Offices in many principal cities
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In Canada: Alexander Murray & Co., Ltd., Montreal
Acousti-Celotex is sold and installed by approved Acousti-Celotex Contractors.

ACOUSTI-CELOTEX
FOR LESS NOISE - BETTER HEARING

Am. S.B.J.
5/29

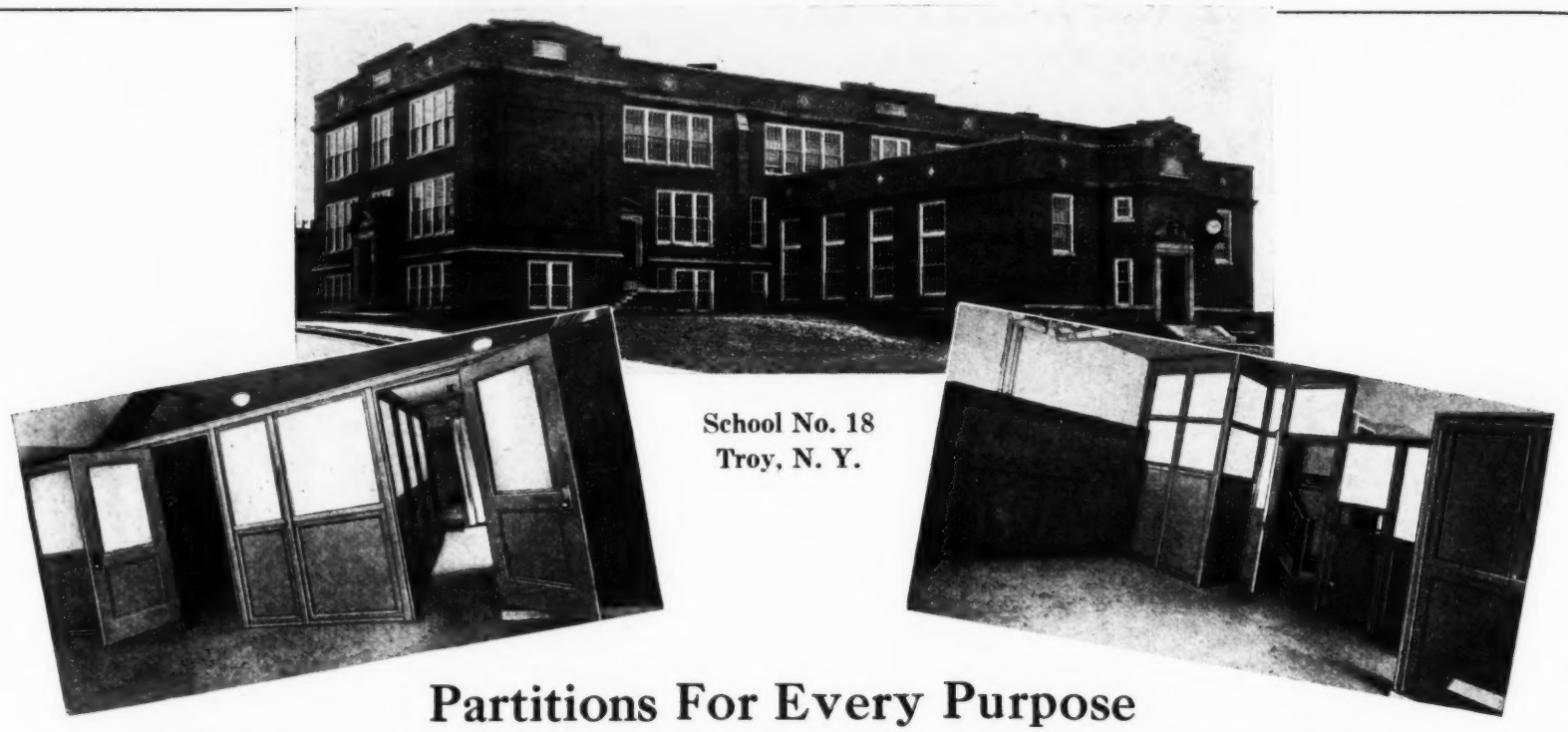
THE CELOTEX COMPANY,
919 No. Michigan Ave.
Chicago, Illinois.

Gentlemen: I would like to know more about Acousti-Celotex. Please send me your booklet, "Better Study Conditions in Schools."

Name .....

Address .....

School .....



School No. 18
Troy, N. Y.

Partitions For Every Purpose

FOR office, manual training rooms, corridor, study hall, gym; in fact for any part of a school structure there's a Sanymetal Partition as adaptable to requirements as are Sanymetal Toilet and Shower partitions to their particular purpose. Schools everywhere are finding them practical, sanitary, good-looking, indestructible, economical.

THE SANYMETAL PRODUCTS CO., 1705 URBANA RD., CLEVELAND, O.

Sanymetal T.M. REG. PARTITIONS

(Continued from Page 82)

.—SUPT. A. L. HUNT of Walters, Okla., has been reelected for a sixth consecutive term.

—SUPT. W. D. WOLFE of Hiawatha, Kans., has been reelected for the coming year.

—SUPT. H. A. HUNT of Portsmouth, Va., has been reelected for a new term of four years. Supt. Hunt has completed his fifth year of service in the schools.

—SUPT. N. J. MARTIN of Baraga, Mich., has been reelected for a new three-year term.

—SUPT. G. B. STILLWELL of Wasta, S. Dak., has been reelected for another year.

—MR. E. S. JONES has resigned as superintendent of schools at Taylorville, Ill.

—SUPT. S. C. MITCHELL of Benton Harbor, Mich., has been reelected for another year, with a substantial increase in salary.

—MR. V. L. BEGGS, supervising principal of the Longfellow School at Oak Park, Ill., has been elected superintendent of schools at Elmhurst. MR. E. G. BYERS has been elected to succeed Mr. Beggs at Oak Park.

—MR. ALBERT KLEINSCHMIDT of Pigeon, Mich., has been reelected for another year.

—MR. W. C. BLANKENSHIP has been elected superintendent of schools at Big Spring, Tex.

—MR. H. L. THOMPSON of Gagetown, Mich., has been elected superintendent of schools at New Baltimore.

—MR. F. R. MATHIS of Bastrop, Tex., has been reelected for his eighth consecutive term.

—SUPT. F. S. BRICK of Stafford Springs, Conn., has been reelected for another year.

—SUPT. C. S. PEARSON of Galesburg, Mich., has been reelected for the ensuing year, at an increase in salary.

—MR. L. E. WARREN of Henderson, Minn., has been reelected for another year, at an increase in salary.

—SUPT. H. T. MILLS of Sandusky, Mich., has been reelected for another year.

—MR. JOHN JACOBS has been elected superintendent of schools at Grass Lake, Mich.

—MR. S. S. MCNELLY has resigned as superintendent of schools at Muscoda, Wis.

—SUPT. W. P. FLATT of Trenton, Tenn., has been reelected as head of the school system.

—SUPT. E. C. GLASS of Lynchburg, Va., has been reelected for another year. Mr. Glass became superintendent in 1879 and is the oldest superintendent in point of service in the United States.

—MR. J. C. SHREVE of Moundsville, W. Va., has been made chairman of the retirement committee of the West Virginia Education Association.

—SUPT. H. G. ELLIS of Petersburg, Va., has been reelected for another year.

—MR. H. N. RHODES of Osmond, Nebr., has been elected superintendent of schools at Laurel.

—SUPT. H. T. COX of Avoca, Iowa, has been reelected for another year.

—The school trustees of South Park Independent School District of Beaumont, Tex., have reelected the following administrative officers for the coming year:

C. W. BINGMAN, superintendent and president of South Park Junior College; D. W. BOITNOTT, dean of South Park Junior College; Z. A. WILLIAMSON, principal of the high school; C. C. WILLIAMS, principal of the trade school; J. J. VINCENT, principal of the elementary school; and KENNETH EVANS, principal of the Giles School.

—SUPT. J. O. HALL of Pakhuska, Okla., has been reelected for a new three-year term, beginning with July 1. Mr. Hall has completed his seventh year of service at Pawhuska.

—At a meeting of the county board of education of the county district of Lake county, Minn., MR. C. E. CAMPTON was elected superintendent of schools for the ensuing school year.

Under a new state law, providing for a change in organization, Lake county has become an independent school district, with a county board of education. The county superintendent as an elective office has passed out of existence, and the new superintendent takes over the work formerly performed by this official.

—SUPT. E. O. SHAW has been reelected head of the school system of Henryetta, Okla., for another term of three years.

—SUPT. L. J. HANIFAN of Paducah, Ky., has been reelected for another four-year term, beginning with July 1. During the four years that Mr. Hanifan has been head of the local school system, the schools have been raised to a high degree of efficiency, teaching standards have been raised to a new high plane, modern methods of grading and instruction have been introduced, including intelligence tests, and special provisions for the promotion of the more brilliant students and for the encouragement of backward or underprivileged children. The average daily attendance has been increased over 53 per cent.

In addition to these improvements, Mr. Hanifan has been responsible for improvements in the physical equipment of the schools. Two new schools have been erected, a new gymnasium and auditorium erected, and improvements made to a number of other buildings.

—MR. WARREN C. CONRAD has been appointed assistant superintendent of schools at Los Angeles, Calif., to succeed Mr. Vierling Kersey. In addition to his duties in connection with the supervision of the elementary schools, Mr. Conrad will continue to have charge of the library and textbook activities of the schools.

—MR. J. P. YOUNG of Waterbury, Nebr., has been elected superintendent of schools at Lyons.

—MR. L. I. SAMUEL has been elected superintendent of schools at Sanger, Tex.

—SUPT. W. J. EDMONDSON of Abingdon, Va., has been reelected division superintendent of schools in Washington county.

—MR. ALBERT BUTLER has been elected superintendent of schools at Lakeview, Mich., to succeed F. L. Haight.

—SUPT. V. L. GRIFFIN of Victoria, Tex., has been reelected for a twelfth consecutive term.

—MR. K. R. MITCHELL has been elected superintendent of schools at Wynot, Nebr.

—SUPT. J. W. RICHARDSON of Hibbing, Minn., has been reelected for the next year.

—SUPT. L. O. MORFORD of Haywarden, Iowa, has been reelected for another year.

—SUPT. O. D. ZELLNER of Graceville, Minn., has been reelected for the next year.

—SUPT. J. E. MATHIS of Americus, Ga., has been reelected for the next year.

—MR. J. I. WEATHERBY has been elected superintendent of schools at Crosbyton, Tex.

—MR. J. C. WERNER of Corapolis, Pa., was recently reelected as supervising principal for a new three-year term, beginning July 1. Mr. Werner was elected to his present position in February, 1920, and during his period of service, the school population has more than doubled. A four-year high school, with an enrollment of 135 pupils, has advanced to a senior high school with 300 students and a junior high school with 540 students. A new senior high school was erected at a cost of $150,000, and a junior high school at a cost of $225,000.

(Concluded on Page 90)

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The Effects of Annual and Semi-annual Promotions as Revealed by Pupil Progress

(Continued from Page 67)

of months of school this means that the children in the annual-promotion school systems require on the average 5.01 months more than the normal amount for the completion of the first eight grades of school. On the average the children in the semiannual-promotion systems require that 5.34 months be added to their school careers if they are to complete the first eight grades. This means a superiority of .33 months in favor of the annual-promotion systems when the first eight grades of school are considered. It is doubtful if this is a significant difference.

There is, moreover, a partial explanation of this situation. It is altogether likely that while shorter intervals between promotions will make progress easier for some pupils, these same conditions will result in increased arrest for a much larger number of children, the less gifted and ambitious ones. To the individual teacher it seems of less consequence to keep a child back one semester than a whole year, but the results of such practice pile up in the records and appear when an inventory is taken.

There are other types of progress indices which reveal in a much more definite manner the real difference between the two promotion systems. Three of these are shown in Table II. This table is quite similar to Table I except that accelerated, normal, and retarded progress are shown rather than under- and over-ageness. The data shown here serve to substantiate the age-grade

TABLE II. Pupils Accelerated, Regular, and Retarded

		Promotion Plan			
		Annual		Semi-Annual	
		No. Cases	%	No. Cases	%
Total Accelerated		391	1.5	810	6.4
Accelerated	Semesters:				
	5 or more	2	.01	2	.02
	4	13	.05	4	.03
	3			7	.06
	2	358	1.4	115	.9
	1	18	.07	682	5.4
Regular		20,266	79.6	7,801	61.8
Retarded	Semesters:				
	1	122	.5	2,384	18.9
	2	3,846	15.1	959	7.6
	3	19	.07	336	2.7
	4	703	2.8	197	1.6
	5	6	.02	75	.6
	6	135	.5	41	.3
	7	27	.11	26	.2
Total Retarded		4,858	19.1	4,018	31.9
Grand Total Cases		25,515	100.0	12,629	100.0

data, and to establish the case for the semester-promotion schools still more definitely as far as *flexibility* of promotion plan is concerned. The progress data show that over four times as many pupils in the semiannual-promotion schools become accelerated. On the other hand, these same data show that a larger proportion of the pupils in semiannual-promotion schools become retarded. These larger percentages at the extremes of the scale are evidence of the greater promotional flexibility of the semiannual plan.

Progress Determined by Balance Between Promotions and Failures

Let us now turn to the third of the measures used to evaluate these two promotion plans. For a time the use of the progress index in child accounting seemed to meet all requirements. Recently, however, it has become apparent that the progress of a pupil may appear to be normal when actual analysis of his case shows that it is not. As a matter of fact, *the rate of progress which a pupil makes through the grade is determined by the balance he has maintained between the double promotions and the failures he has experienced in his school career.* If he has had *more double promotions than failures,* he is *accelerated;* if he has had more failures than double promotions, he is *retarded;* and if he has had an equal number of each he is making *regular progress.* The recognition of the importance of this balance between skips and failures as an index to school progress prompted the use of it as a third means of expressing the effect of the two types of promotion under consideration.

Before we take up the data in more detail we should possibly pause to point out one or two pitfalls which are encountered in the interpretation of promotion data of this type. Throughout this discussion it should be kept in mind that a double promotion or a failure in schools using a

TABLE III. Number of Pupils Enrolled in the Schools Using Each System of Promotion

Promotion System (1)	Boys (2)	Girls (3)	Total (4)
Annual	12,735	12,383	25,118
Semi-Annual	6,082	6,130	12,212
Both combined	18,817	18,513	37,330

scheme of annual promotion means a whole year's acceleration or retardation; while in the semiannual-promotion systems, it means only a half year. The greater administrative flexibility of the latter system accounts for the relatively larger per cents of children skipping and failing. It also means that it requires a greater number of children in a school organized under the semester plan to produce a specified number of skips or failures than it does in a school promoting annually. That is, while in the former (semester-promotion) systems a greater number of children skip or fail, the time gained or lost by each child at each skip or failure is only half the amount of that in a school promoting once a year. For example, in a school that promotes the children once a year, 100 skips or failures are produced by 100 children—provided each child skips or fails only once. It is evident that 200 children are required in a school which promotes semiannually to produce the equivalent of 100 accelerations or failures of the annual-promotion type. In reality, some children skip more than once, and many children fail more than once. Also some children both skip and fail.

Let us now return to the data on this phase of the problem. Table III shows merely the type

HON. GEORGE E. BROWN
State Commissioner of Education for Wyoming, Cheyenne, Wyo.

Mr. George E. Brown, formerly superintendent of schools at Greeley, Colo., has been appointed state commissioner of education for Wyoming. Out of a list of candidates, Mr. Brown received the appointment because of his excellent qualifications.

Mr. Brown is a graduate of the Emporia, Kans., Normal School. He attended Indiana University for two quarters, and also completed courses at the Colorado Teachers' College, Denver University, and Columbia University. The degree of A.M. was given by Teachers College, Columbia University, in 1926.

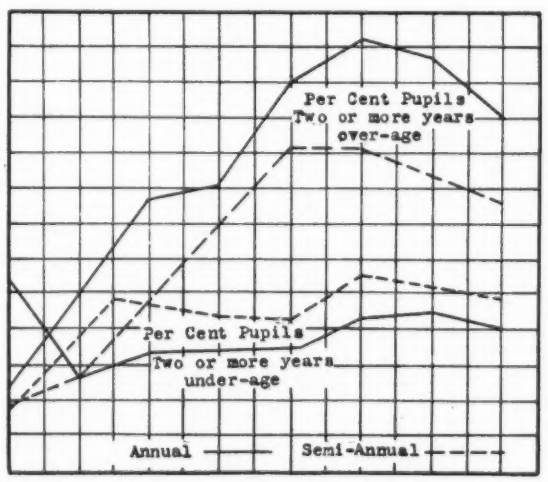
Following his graduation, Mr. Brown taught in the rural schools for two years. Later he was a teacher and principal in the city schools. He was superintendent at Garden City, Kans., for five years, and spent two years at Wenatchee, Wash., and one year at Palouse, Wash. He has been superintendent of schools at Greeley for thirteen years and taught in the summer school of Colorado Teachers' College for six summers.

and extent of the data utilized at this point. These 37,330 cases afford a fairly reliable basis for the tabulations presented in the succeeding tables. The totals will be helpful in interpreting Table IV.

Two somewhat distinct types of data for skipping and failing and for the two types of promotion plans are available. The next table (Table IV) shows the actual number of pupils who skipped and failed one or more times in the school which had either annual or semiannual

TABLE IV. Skips and Failures in Annual and Semiannual Systems of Promotion

	Number of Times									Total Number of Pupils	Percent of Total Number
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine		
Annual Promotion											
Skipping:											
Boys	176	3	.....	.....	.....	.....	.....	.....	.....	179	1
Girls	216	3	1	.....	.....	.....	.....	.....	.....	220	2
Both	392	703	1	.....	.....	.....	.....	.....	.....	399	2
Failing:											
Boys	2,391	470	100	22	4	.....	.....	.....	.....	2,987	24
Girls	1,553	233	41	11	2	.....	.....	.....	.....	1,840	15
Both	3,944	703	141	33	6	.....	.....	.....	.....	4,827	19
Semiannual Promotion											
Skipping:											
Boys	321	50	5	3	1	.....	.....	.....	.....	380	6
Girls	435	69	5	.....	.....	.....	.....	.....	.....	509	8
Both	756	119	10	3	1	.....	.....	.....	.....	889	7
Failing:											
Boys	1,305	522	185	117	54	32	13	9	.....	2,237	37
Girls	1,089	391	132	60	21	13	2	3	2	1,713	28
Both	2,394	913	317	177	75	45	15	12	2	3,950	32



PERCENTAGES OF PUPILS TWO OR MORE YEARS OVER-AGE OR TWO OR MORE YEARS UNDER-AGE

systems of promotion. This table should be interpreted with the previous table (Table III) in mind. Of the 25,118 pupils in the annual-promotion systems, 392 skipped once, 6 twice, and 1 three times, making a total of 399, or 2 per cent of the pupils enrolled. Of this same group 3944 pupils failed once, 703 twice, 141 three times, 33 four times, and 6 five times, making a total of 4827 pupils, or 19 per cent of the number of pupils enrolled in the schools which used the annual system of promotion. In a similar way 7 per cent of the pupils in semiannual-promotion schools skipped one or more semesters, while 32 per cent of these pupils failed one or more semesters. However, these figures should not be interpreted too literally on account of the different amounts of time between promotions.

A slightly different interpretation of these same data is given in the next table (Table V) which shows the total number of skips or failures

(Concluded on Page 89)

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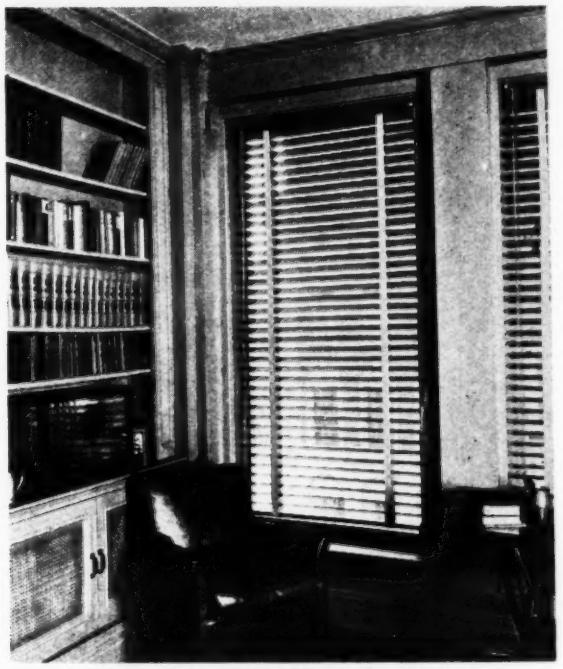
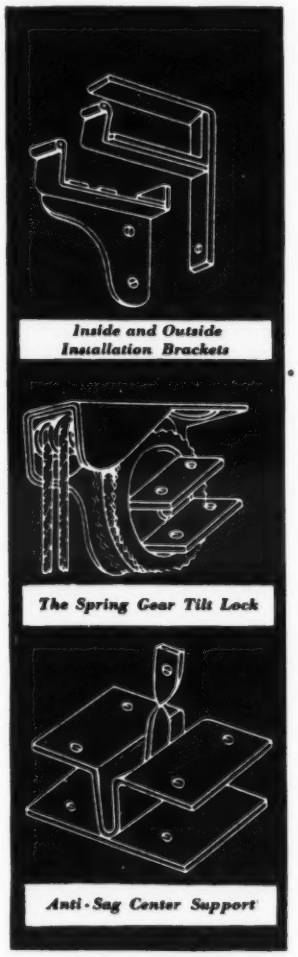
the PERFECTED VENETIAN BLIND



A corner of Mr. Douglas Gibbons' office showing an installation of Columbia Venetian Blinds. The entire offices of Douglas Gibbons & Co. are so equipped



VENTILATED Daylight is a good description of what Venetian Blinds give you. Though shielding from sunglare, they allow the air to enter between the slats, thus giving the maximum of comfort during hot days. And they are as elegant as they are durable — Venetian Blinds are good for a lifetime of service.

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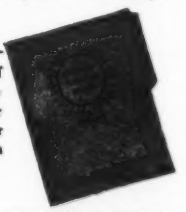

This folder gives complete specifications of Columbia Venetian Blinds, and also tells how they help to increase the daylight in the darker parts of rooms by as much as 100%. For your copy address The Columbia Mills, Inc., 225 Fifth Avenue, New York City.

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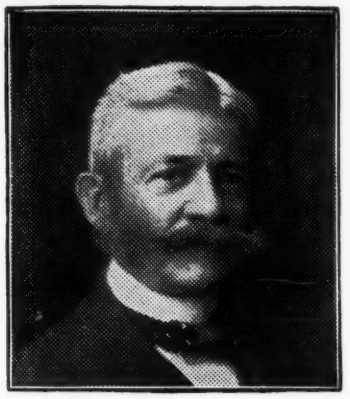

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(Concluded from Page 86)

as well as the number of each per hundred pupils in each group. From the data given in Table IV you will note that the total number of skips for all pupils in annual-promotion systems is 407. That is,

1 skip	by 392 pupils	= 392	skips
2 skips	by 6 pupils	= 12	skips
3 skips	by 1 pupil	= 3	skips
Total number		= 407	skips

This represents 1.62 skips per hundred pupils (25,118 divided into 407). By a similar method of combining the data given in this table (Table IV) we may determine the number of failures:

1 failure	made by 3,944 pupils	= 3,944	failures
2 failures	made by 703 pupils	= 423	failures
3 failures	made by 141 pupils	= 423	failures
4 failures	made by 33 pupils	= 132	failures
5 failures	made by 6 pupils	= 30	failures
Total number		= 5,935	failures

The number of failures is equivalent to 23.63 failures per hundred pupils in annual-promotion systems, etc. The summaries of these calculations are presented in Table V.

In considering these indices of skips and failures, it should be remembered that the unit of skipping or failing in the annual-promotion systems is *one year* and in the semiannual-promotion systems is *one-half year* or one semester. Accordingly, a direct comparison of these measures of the progress made by pupils in the two systems is unsafe. However, the main interest here is in the relative flexibility of the two systems, the extent to which each type tends to accelerate the superior pupils and to retard the inferior pupils. The superior flexibility of the semester-promotion system is indicated clearly by the data in this table. Not only are there more failures per hundred in the semester-promotion schools, but there are also more skips per hundred pupils; 8.52 skips and 55.22 failures to each

TABLE V. Skips and Failures per One Hundred Pupils

	Total Number of Pupils	Skips		Failures	
		Number	Number per 100 Pupils	Number	Number per 100 Pupils
Annual Promotion					
Boys	12,735	182	1.43	3,739	29.36
Girls	12,383	225	1.82	2,196	17.73
Total	25,118	407	1.62	5,935	23.63
Semiannual Promotion					
Boys	6,082	453	7.44	3,997	65.71
Girls	6,130	588	9.59	2,746	44.80
Total	12,212	1,041	8.52	6,743	55.22

hundred children. Under the yearly promotion plan there are only 1.62 skips (3.24 if expressed in semester units) and 23.63 (47.26 semester units) failures for each group of one hundred pupils. The ratio of 8.52 to 55.22 is 14.8. This means that there are *14.8 times as many failures as accelerations* in the annual-promotion schools, and only *6.5 times as many failures as accelerations* in the schools organized for promotion on a semester basis.

The advantage of promotion by semesters lies in the fact that it allows a *greater number* of pupils to progress *faster* than does the annual-promotion plan. The total amount of time involved, or semesters gained, may be somewhat greater in the annual-promotion schools, but this advantage is more than offset because fewer children progress. On the other hand, more pupils are retarded in the schools which promote semiannually than in those promoting annually. However, in the former a child is retarded but one-half year as compared to a whole year in the latter.

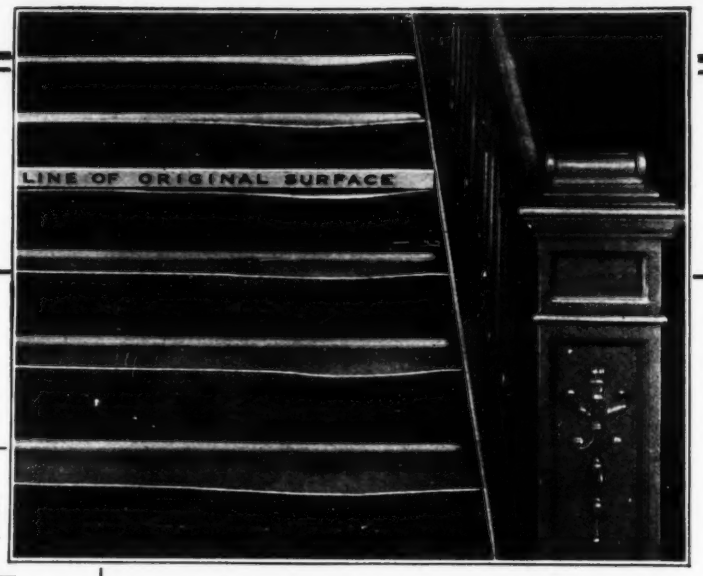
In conclusion, the three types of data presented in this study reveal the fact that greater flexibility in school progress results where semester-promotion is followed. The age-grade study indicates that serious over-ageness and a much smaller proportion of under-ageness is found in the annual-promotion schools. The progress data show that proportionately over four times as many pupils in the semiannual schools become accelerated. On the other hand, there is a significantly larger proportion of pupils from semiannual-promotion schools who become retarded. This point is revealed with unusual clearness in terms of the relation between failures and double-promotions. There were 14.8 times as many failures as double-promotions in annual-promotion schools, while there were only 6.5 times as many in schools promoting on the semester basis. This is undoubtedly a significant factor favoring the semiannual, or semester plan, of school organization for pupil promotion.

HYGIENE AND SANITATION

—Haworth, N. J. The school board has approved a proposal of the local health department, providing toxin-antitoxin vaccination as diphtheria immunization for children in the city schools. Under the plan adopted, the health department will meet the cost of the first vaccinations, while the school board will assume the expense for giving the vaccinations to new pupils who have not previously been inoculated.

—The dental clinic recently installed at Franklin, Pa., was established under the direction of the Red Cross organization It is modern in all respects and the expenses of operation are borne by the Junior Red Cross. Pupils who are eligible to its privileges must be recommended by the teacher or the district nurse as free-service patients.

—Shaker Heights, Ohio. A vaccination survey of the kindergarten and first six grades of the schools recently completed shows that 66 per cent of the children are vaccinated. It was urged that every child be vaccinated at least once, and again, if smallpox is prevalent.



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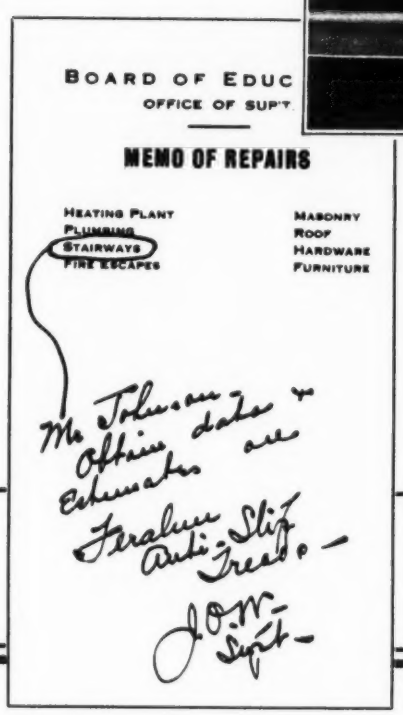
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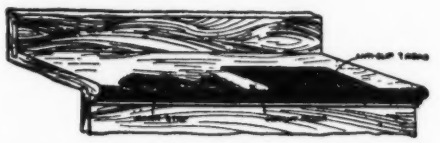

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(Concluded from Page 84)

—SUPT. MILO C. MURRAY of Michigan City, Ind., has been reelected for a fourth consecutive term, with a substantial increase in salary.

—MR. O. W. WILLS, formerly head of the commercial department in the Proviso Township High School, Maywood, Ill., has been elected as business manager of the high school.

—SUPT. KEY WOLF of Davis, Okla., has been reelected for another year.

—DANIEL A. GROUT, superintendent of schools of Portland, Oreg., from 1919 to 1926, died at his home on February 27, after a long period of ill health. Mr. Grout completed a service of 34 years in the Portland schools, first as a principal, and later as assistant superintendent and superintendent of the school system. He was a graduate of St. Thomas Normal School in St. Thomas, Ontario, Canada, and of the University of Oregon Law School. School activities in Portland paused for a brief period during the funeral services which took place on March 1.

—SUPT. FLOYD SMITH of Reedsburg, Wis., was reelected for a two-year term, with a substantial increase in salary.

—SUPT. F. B. FARMER of Storm Lake, Iowa, has been reelected for another year.

—SUPT. A. B. SANDERS of Ralls, Tex., has been reelected for another year.

—SUPT. A. O. MYRON of Jackson, Iowa, has been reelected for the ensuing year.

—SUPT. O. S. WOOD of Great Neck, N. Y., has resigned and will enter college educational work.

—SUPT. G. C. ADLER of Pigeon, Mich., has been reelected for another year, with a substantial increase in salary.

—SUPT. R. E. COTANCHE, of Lawton, Mich., has been reelected for a fourth consecutive term.

—SUPT. P. W. MAYER of Custer, Mich., has been reelected for another year.

—MR. J. E. ERICKSON has been elected superintendent of schools at Hazel Park, Mich., to succeed T. F. Davis. He was formerly head of the schools at Hillsdale.

—MR. D. D. PUTNAM of Freeport, Mich., has been elected superintendent of schools at Caledonia for the next year.

—MR. H. H. EELKEMA of Groton, S. Dak., has been elected superintendent of school at Mankato, Minn., to succeed H. D. Kies.

—SUPT. T. J. MCGLYNN of DePere, Wis., has been reelected for the ensuing year.

—MR. R. G. BROOKS of Cedar Rapids, Nebr., has been elected superintendent of schools at Hartington.

—MR. C. S. HETRICK of Elm Creek, Nebr., has been elected superintendent of schools at North Bend.

—SUPT. C. A. KROUT of Tiffin, Ohio, is completing his 29th year as superintendent of the city schools. Previous to his election as superintendent, Mr. Krout had served ten years as principal of the high school.

—SUPT. T. J. JONES of West Allis, Wis., has been reelected for a three-year term, with a substantial increase in salary.

—SUPT. H. H. GAULKE of What Cheer, Iowa, has been reelected for a fourth consecutive term.

—SUPT. T. B. WARREN of Nevada, Iowa, has been reelected for a ninth consecutive term, with an increase in salary.

—SUPT. D. V. SPENCER of Jackson, Ga., has been reelected for another year.

—MR. DONALD O'HARA has been elected superintendent of schools at East Lansing, Mich., to succeed R. E. Lane.

—SUPT. B. C. SHANKLAND of Cadillac, Mich., has been reelected for the next year, with a substantial increase in salary.

—SUPT. W. L. GARD of Beardstown, Ill., has been reelected as head of the school system for another year.

—MR. EARLE C. DUNCAN has been reelected as head of the school system of Clarinda, Iowa, for a three-year period.

—MR. LEO W. BREUER of Bellingham, Wash., has been appointed commissioner of education for Alaska. Mr. Breuer is a graduate of the Bellingham Normal School and the University of Washington. For the past two years he has been superintendent of schools at Nome.

—SUPT. H. L. SQUIBB of Selah, Wash., has been reelected for the next year.

—MR. F. W. KIRKHAM of Granite, Utah, has accepted a position as director of the National Child Welfare Association in New York City. Mr. Kirkham enters upon his new work on July 1.

—SUPT. A. H. NAYLOR of Port Jervis, N. Y., has been reelected for another year, with a substantial increase in salary. Mr. Naylor is completing his fifteenth year as head of the Port Jervis schools.

—SUPT. E. R. VAN KLEECK of Walden, N. Y., the youngest superintendent of schools in New York state, was recently reelected for another year, with a substantial increase in salary. In addition to an increase in salary, Mr. Van Kleeck has been given a generous financial bonus for his work during the past year.

—MR. JULIUS E. WARREN, superintendent of schools at Lakewood, Ohio, was recently elected president of the local rotary club. MR. GEORGE W. GRILL, assistant superintendent of school, is president of the Kiwanis club, and MR. G. E. BICKFORD is president of the civic club council. These three executives, as well as the five members of the board of education are represented on practically every board of directors in every movement for civic or philanthropic work in the community.

—DR. HERSCHEL PETTIT has been reelected president of the board of education of Ocean City, N. J., for a third term. DR. M. B. STANNARD took his seat as a member of the board, succeeding Dr. J. T. Hughes.

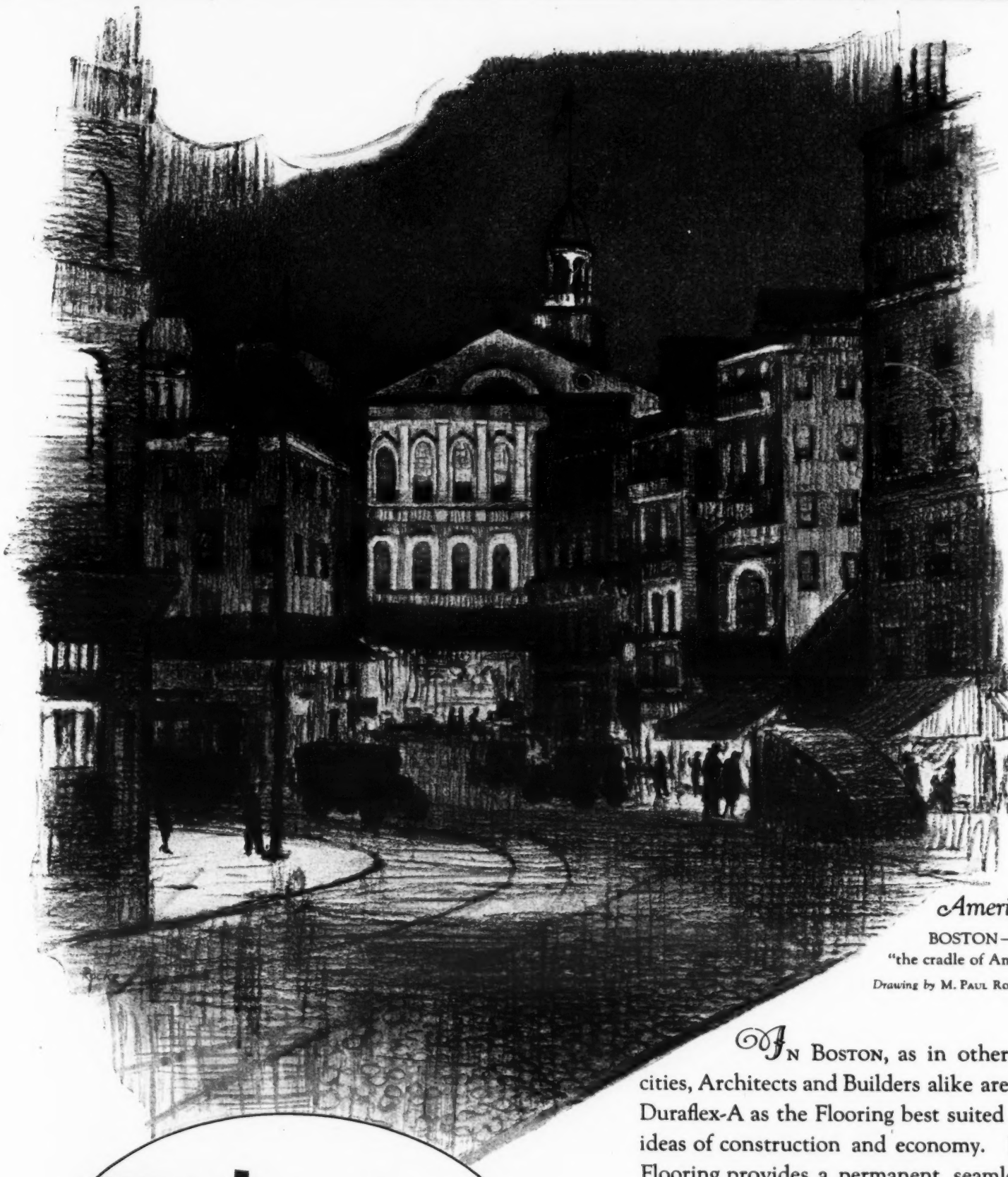
MR. BARBEE TO ST. JOSEPH, MO.

Mr. Frederick H. Barbee, formerly assistant superintendent of schools at Kansas City, Mo., on March 7, became superintendent of the city schools of St. Joseph, succeeding Mr. Daniel Hopkins.

Mr. Barbee is a graduate of the State Teachers' College of Warrensburg and holds a bachelor's degree from the State University, and a master's degree given by the University of Kansas. He has also completed graduate work at the University of Chicago and Teachers' College of Columbia University.

Mr. Barbee began his educational career as a teacher in the rural schools of Missouri, later holding several high-school principalships, until he was elected a city superintendent of schools at Nevada. Upon entering the Kansas City school system, he was principal of one of the elementary schools, later principal in the junior high school, and in October, 1927 was appointed as assistant superintendent of schools, where he was in charge of the junior and senior high schools and colleges, as well as a director in the work of curriculum revision for the several high schools of the city.

Mr. Barbee's broad training and extended experience fit him admirably for the superintendency in St. Joseph, where he will have wide opportunity for building up a strong school system and for bringing the school plant up to a high standard.



American Cities

BOSTON — Faneuil Hall,
"the cradle of American liberty"

Drawing by M. PAUL ROCHE (Series No. 8)

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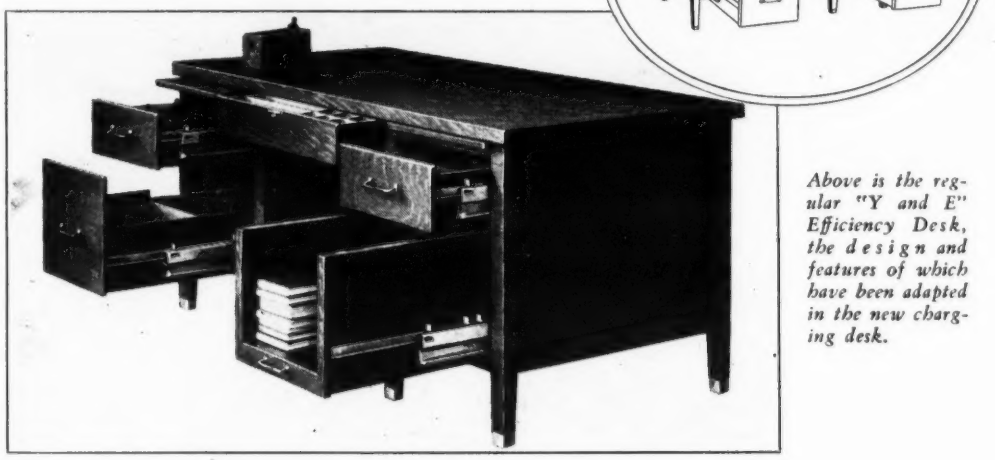
Note the features of this new desk. The top drawer contains removable card trays. The lower right hand compartment is for book storage.



Above is the regular "Y and E" Efficiency Desk, the design and features of which have been adapted in the new charging desk.

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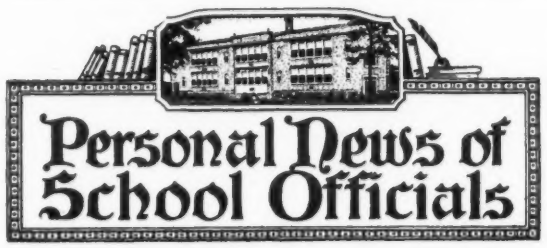


Personal News of School Officials

—MR. JOHN B. CARVERA supervisor of attendance for the board of education at Omaha, Nebr., died on March 12, at the age of 58 years.

—MR. V. E. HAYWARD has been reelected as president of the board of education at Davenport, Iowa.

—MR. A. R. MCARTHUR, a member of the school board of Gary, Ind., for the last twelve years, died at his home on March 12. During Mr. McArthur's long service on the board he was always available for cooperation where needed. He took a special interest in demanding architectural beauty and physical efficiency in the school buildings of the city, all of which is evident in the modern school structures, the spacious playgrounds, and parks surrounding the centers.

—MR. J. G. HUBER and MR. W. L. HALEY have been reelected as members of the board of education at Sioux City, Iowa.

—MR. J. H. FRELIGH has been reelected president of the school board at Fort Madison, Iowa.

—MR. ARTHUR HURTT and MR. W. J. NEILL have been reelected as members of the board of education.

—MR. W. C. BAGLEY has been reelected to the school board of Mason City, Iowa, for a ninth consecutive term. Mr. Bagley has been a member of the board since 1915, and president since 1918.

—MR. S. R. GRIMES and MR. EARL W. FORD have been reelected as members of the board of education at Bristow, Okla.

—MR. LOUIS F. METZ, for the past six years a member of the school board of Dubuque, Iowa, and for three years its president, retired from the board at its March meeting. Mr. Metz was presented with an inscribed walnut gavel, made in the school shop, as a token of appreciation of his service to the public schools. MR. JAMES F. RYAN was elected to succeed Mr. Metz as a member of the board.

DR. H. B. GRATIOT has been reelected as president of the board, and MR. MILTON J. GLENN has become vice-president. The new members of the board are DR. J. J. BROWNSON and MR. JAMES F. RYAN.

—At the spring election held at Seattle, Wash., on March 12, Mr. O. B. Thorgrimson, chairman of the school board was defeated by MR. JOHN B. SHORETT. MR. E. B. HOLMES, the present incumbent, was reelected for a new three-year term. Mr. Dietrich Schmitz, candidate for a one-term directorship, was defeated by JUDGE A. E. GRIFFITHS.

—MRS. W. F. DECKER has resigned from the board of education of Minneapolis, Minn., due to her anticipated absence from the city.

—MR. E. C. OSCAR, secretary-treasurer of the board of education of Saginaw, E. S., Mich., for a number of years, and later of the consolidated district, has resigned to become district manager of an insurance company. The work of the department has been divided, with MR. C. A. F. FALL as secretary, and MR. L. A. HENNING as treasurer, the personnel remaining the same.

—DR. R. E. LEIDIGH has been reelected as a member of the school board at Marion, Iowa. MR. WILFRED BELL was elected as a new member.

—MR. A. S. BEARY has been reelected as president of the school board at Marshalltown, Iowa.

—MR. H. G. GEIGER has been reelected as president of the school board at Sheldon, Iowa.

—MISS JEAN HAMILTON has been appointed school attendance officer at Omaha, Nebr.

—MR. J. Q. CRAVEN, secretary of the school board of Excelsior Springs, Mo., will have completed 27 years of service with the expiration of his term in July.

—MR. R. C. BENNINGTON has been reelected as president of the school board of Sperry township, Volga, Iowa.

—The school board of Sheldon, Iowa, has reorganized with the reelection of MR. H. G. GEIGER as president. Mr. G. J. Bloxham, who resigned as a member, has been succeeded by MR. J. C. HOSPERS.

—The school board of Haworth, N. J., has reorganized, with the reelection of MR. J. F. HAMLIN as president, and MR. WILLIAM REID as vice-president.

—At a recent election held at Clarinda, Iowa, MR. O. M. COOK and MR. C. E. BRADLEY were reelected as members of the board of education. Mr. Cook was reelected as president of the board.

—MR. EARL C. KNAPP, president of the board of education at Tiffin, Ohio, is serving his twentieth year as a member of the board.

—MR. H. M. COLE and MR. JOHN NORBY have been elected as members of the board of education at Rupert, Idaho, to succeed Mrs. A. F. Beymer and Mr. George Donaldson.

—SUPT. O. W. LAIDLAW of Tecumseh, Mich., has been reelected for another year, with an increase in salary.

—MR. W. E. MCBRIDE, superintendent of schools at Greenview, Ill., has announced his resignation, to become effective on June 1. Mr. McBride will enter upon a graduate course at the Illinois Normal University and at Chicago University during the next year.

—MR. E. E. SWANSON of Manson, Iowa, has been elected superintendent of schools at Humboldt for the next year. MR. H. C. DEKOCK, formerly principal of the high school at Manson, has been elected to succeed Mr. Swanson.

—SUPT. H. R. WOODWARD of Hot Springs, S. Dak., has been reelected for a new three-year term, with a substantial increase in salary. Mr. Woodward has been head of the local school system since 1916.

—MR. AMOS E. ROGERS of Presho, S. Dak., has been elected superintendent of city schools, to succeed Roy Knapp.

—The circuit court of Christian county, Ky., has dismissed the charges preferred against MR. B. H. COOK, former superintendent of the county school system. A summons to appear before the court was served on Mr. Cook in February, 1929.

—SUPT. J. M. FRAZER of Lewiston, Nebr., has been reelected for another term of three years.

—SUPT. H. L. BLEEKER of Hart, Mich., has been reelected for the coming year.

—MR. W. H. VAN PETTEN of East Lansing, Mich., has been elected superintendent of schools at Bellaire for the coming year.

—SUPT. R. E. MOSELEY of Tifton, Ga., has been reelected as head of the school system.

Everything in Radio *plus an* All-Electric Phonograph

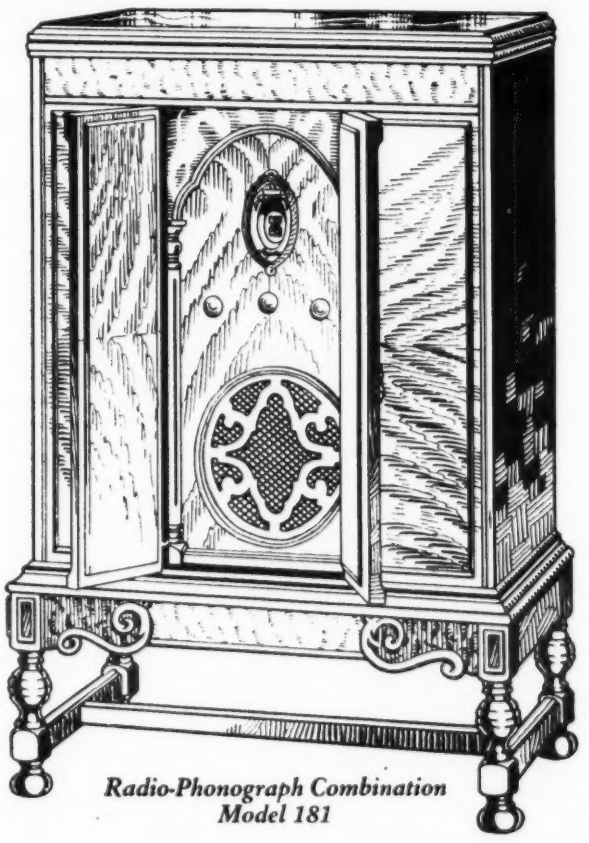
In one instrument . . . . an amazing radio receiver setting new standards of reproduction and beauty in cabinet-work . . . . a 1930 electric pick-up, electric-motor phonograph . . . . at a price that has rocked the radio industry. By mass production, Majestic gives you . . . at moderate cost . . . . the greatest instrument for musical instruction and education the world has ever seen.

The use of *two* type-250 power tubes makes possible reproduction such that from 1 to 10,000 can clearly hear every note . . . . every word. The day of the Hoover Inauguration, Majestic Model 181 was installed in hundreds of schools with perfect results in ever case. The electric phonograph permits the teacher to play *any* type of music . . . . elementary *or* advanced . . . . when she wants it!

There are Programs on the Air Your Pupils Shouldn't Miss

Classroom instruction via the radio on a nation-wide scale is the next great step in program development planned by the broadcasting chains. The Columbia Broadcasting System has already crystallized its plan in co-operation with the National Education Association and will broadcast a "national radio assembly" over its 43-station network next fall. The National Broadcasting Company now sends out the Walter Damrosch musical appreciation hour tuned in by many schools.

So great has been the demand for Majestic Radio that production of Majestic Receivers and Radio-Phonograph Combinations is now 4000 *every day!* Only outstanding performance would enable any one receiver to sweep the country as has Majestic. Get in touch with your local dealer, and . . . . if you contemplate using a number of radio receivers . . . . his distributor. Majestic has a special proposition for schools which distributors will be glad to present.



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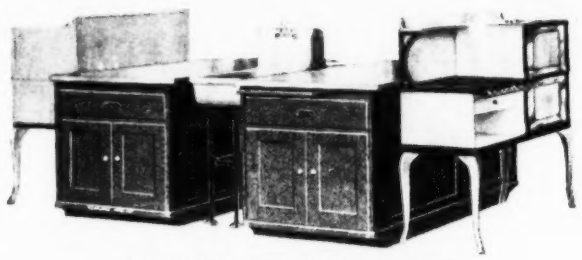
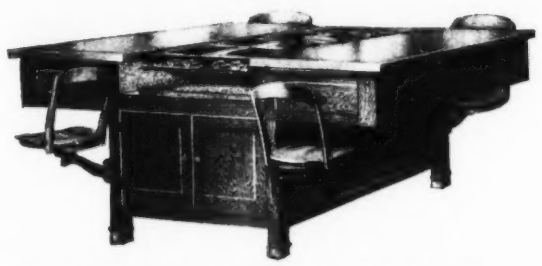


Special Texas Domestic Science Group
With Kemco Monel Metal Top.



No. 16035 Domestic Science Table with Swinging Chairs

This Table accommodates four students at one time. Also furnished with swinging stools instead of chairs. "Kemco Process" Monel Metal Top.

On Domestic Science Tables

Now the new Kewaunee Domestic Science Tables are made more lasting than ever. The 10 ply top is covered with "Kemco Process" Monel Metal. It will last for years under the hardest service. Besides having unusual lasting qualities they have the following features:

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NEW RULES & REGULATIONS

RULES GOVERNING THE WORK OF THE BUSINESS MANAGER

The board of education at Henryetta, Okla., has adopted rules governing the work of the business manager of the school system. The rules read as follows:

1. The business manager will be elected by the board, at a salary to be fixed by the board, and for a term not exceeding two years. He must given a bond for the faithful performance of his work, the cost to be borne by the board.

2. He will have charge of the buildings, grounds, and property of the schools and must visit all buildings owned or rented by the board at least once each month, and as often as time permits, must inspect the condition of the property and the work of the custodians.

3. He will have authority to direct the work of the custodians and may order transfers to buildings when an exchange of work will be advantageous to the board.

4. The business manager must report to the clerk the time of such custodians as are employed by the board during the summer vacation. When the custodians have complaints to make regarding their work, or their treatment, they must report first to the business manager for his consideration and adjustment.

5. The business manager must, as far as possible, personally perform all necessary repairs and superintend such repairs as are made by other workmen employed by the board.

6. The business manager will have charge of all supplies, furniture, and material purchased by the board, and must issue them to the custodians and principals, keeping an itemized account of the same by buildings.

7. He must refer to the board all matters concerning custodians, buildings, furniture, heating apparatus, building and janitorial supplies, repairs, or other property, together with an estimate of his recommendations.

8. He must investigate any call by the superintendent, or principal, for repairs and for supplies, and must attend to the same according to the orders of the board.

9. He must recommend for payment all bills for repairs, light, fuel, water, supplies and other material recommended by the superintendent. He must submit an itemized statement of his work each month.

10. He must advertise for bids and must purchase such supplies as the schools require, and must require, and must report the same to the board at its next regular meeting. In no case may the cost of such supplies exceed the amount for which they may be purchased without advertising for bids.

11. The business manager will appoint, upon the approval of the superintendent, all janitors to fill vacancies, until the proper action is taken by the board.

12. Under the direction of the superintendent of schools, the business manager will attend to the fumigation of the school buildings.

13. The business manager must superintend the janitors in their work, except during the daily session of the school, when they will be under the direction of their respective principals.

14. The business manager must give prompt attention to the requisitions for supplies requested by the principals, after they have been countersigned by the superintendent. In case an article is not on the approved list of supplies authorized by the board, the business manager must obtain the approval of the superintendent before granting such supplies.

RULES GOVERNING THE DUTIES OF JANITORS

The board of education at Henryetta, Okla., has adopted rules governing the duties of janitors in the schools. The rules read as follows:

1. Janitors will be appointed by the board of education upon the recommendation of the superintendent, and will receive such compensation as may be fixed by the board. They will not be given contracts, but will serve as long as their work, conduct, and morals are satisfactory.

2. Janitors will have general care of the school buildings and premises, and will perform such other duties as may be prescribed by the superintendent and principals of their respective buildings.

3. They must be clean in personal appearance and habits, civil, and courteous at all times, and must abstain from the use of intoxicating liquors, profane language, the use of tobacco, or anything which tends to injure the morals of the pupils.

4. They will have exclusive control of the heating apparatus in their respective buildings during school hours, under the general direction of the superintendent or principal, and they will be held responsible for keeping the rooms sufficiently warm for school purposes at all seasons when fires are needed, from 8:30 a.m., until the close of school in the afternoon.

5. They will attend to the locking and unlocking of outside doors of the school buildings at the proper time. It will be the duty of the janitor of each building to see that all doors leading from hall exits are not locked, bolted, or prevented from opening outward as long as any teacher or pupil remains in the building.

6. All rooms, halls, and stairways must be swept daily, and all desks, tables, seats, chalk rails, and window sills must be dusted daily. All sweeping must be done in the afternoon after the close of school, except in the case of halls and stairways.

7. Janitors must keep the school buildings and grounds in good condition at all times.

8. Janitors must keep diligent watch to see that pupils, or other persons, do not deface the buildings, walls, or toilets, nor in any way damage the property belonging to the school district.

9. Each room must be thoroughly cleaned before school opens in September, and during the Christmas vacation.

10. All inside walls must be wiped with cloth-covered brush at least once each month.

11. Janitors must display the flag each day the schools are in session, provided the weather is such that the flag receives no injury.

12. All windows must be thoroughly cleaned the week before the opening of school in September, and as often thereafter as necessary.

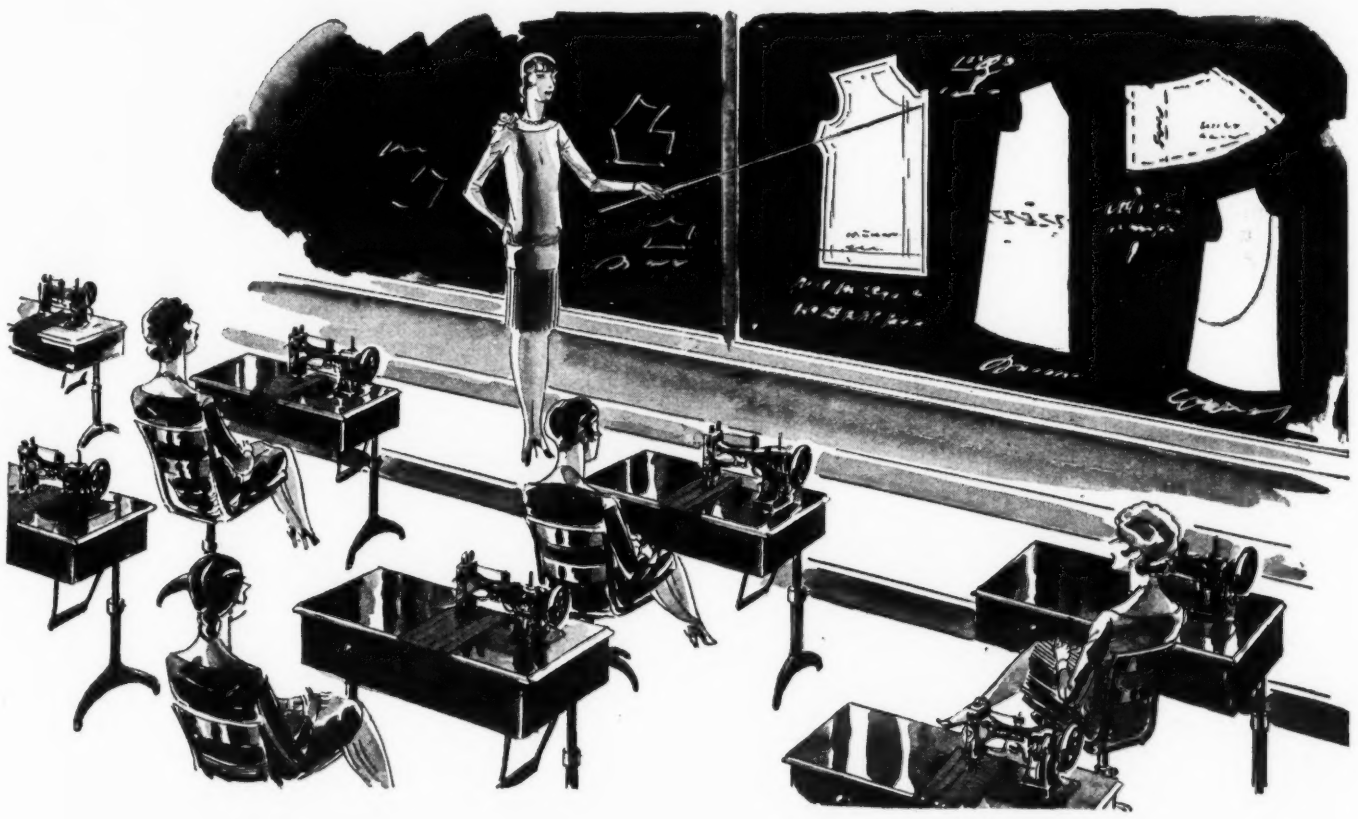
13. All walks must be kept clear of dirt, ice, and snow. All wash basins and toilets must be kept in a clean condition.

14. Janitors must keep their buildings and equipment in good repair, making repairs as needed, and reporting to the secretary such repairs as they are unable to handle.

15. Janitors must use disinfectants regularly.

16. Janitors will be held responsible for all supplies delivered at their buildings and must turn these over to the secretary at the end of each month, together with an invoice of the supplies received, and a statement of the repair work done by outside parties.

(Continued on Page 97)



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THE new "Educator Model" of the White Rotary Electric is the only sewing machine specifically designed for class use. Every feature of its mechanism, every line of its table and chair has been carefully worked out by White and Kundtz engineers to foster ideal conditions in sewing class rooms. With the new "Educator Model", both teaching and learning are easier.

The extremely simplified operation of the new "Educator Model" enables the beginner to sew smoothly and easily.

"Sit-straight" feature . . . Permits the user to sit directly in front of the needle, assuring correct posture when sewing.

Adjustable to student . . . chair and machine have an easily operated positive adjustment lock for raising and lowering to fit the student. Special ferrules . . . movable . . . permit easy rearrangement of machines and chairs. The adjustability of both machine and chair is an exclusive feature found in the "Educator Model" and *no other.*

(When ordering the new "Educator (Model No. 401) specify with or without correct posture chair.)

Rotary or round bobbin type of sewing mechanism . . . quiet, vibrationless movement; especially suited to electric drive.

Sturdy electric motor . . . Built for White sewing machine use only.

Simplified knee control . . . permits the user to sew as slowly or as fast as she chooses by merely varying the pressure of the knee on the lever.

Sewing light . . . Concentrates the light on the point of sewing, no glare.

The open front . . . and convenient drawer provide ample storage space.

Separate collapsible cover . . . This Electric Sewing Machine has been designed with the definite requirements of school use in mind.

We urge you to consider each of these new advantages, bearing in mind why a sewing machine used in schools should be so constructed. Write for full information on the machine and teaching aids supplied with it.

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WOOSTER SAFE-GROOVE TREADS are as truly automatic as any machine or device with moving parts which functions automatically. As a safety-device, Wooster Safe-Groove Treads work automatically without thought on the part of the user.

Matches, pencil stubs, elastic bands and other things which litter stairways, automatically drop into the deep, narrow grooves in Wooster Safe-Groove Treads and are held safely away from the foot. On stairs equipped with these treads the foot comes in contact only with the flat ridges of abrasive grits which wear slowly and evenly, giving many years of wear and protection against slipping accidents.

Note how pencil stubs and matches automatically drop into the grooves of Wooster Safe-Groove Treads so that the foot does not touch them.

Wooster Safe-Groove Treads help to keep a building clean, too, because in wet or snowy weather the treads act as a foot scraper and prevent snow and mud from being tracked through corridors. The deep grooves are easily cleaned with one stroke of a broom and the walking surface is always clear.

On a flat surface, a pencil stub or nail offers a slipping hazard when it contacts with the foot.

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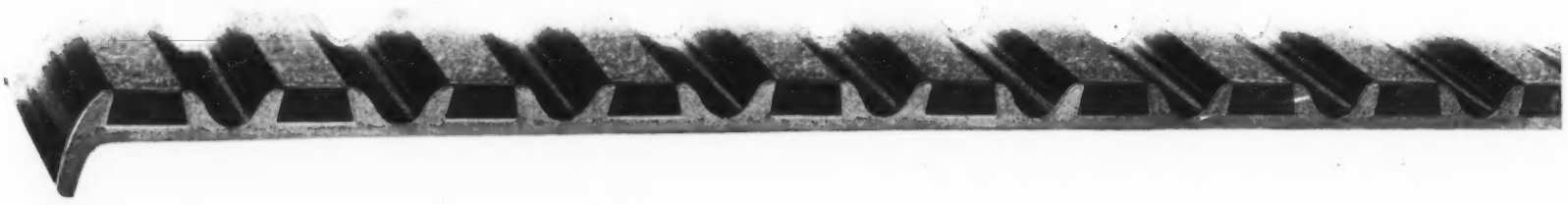

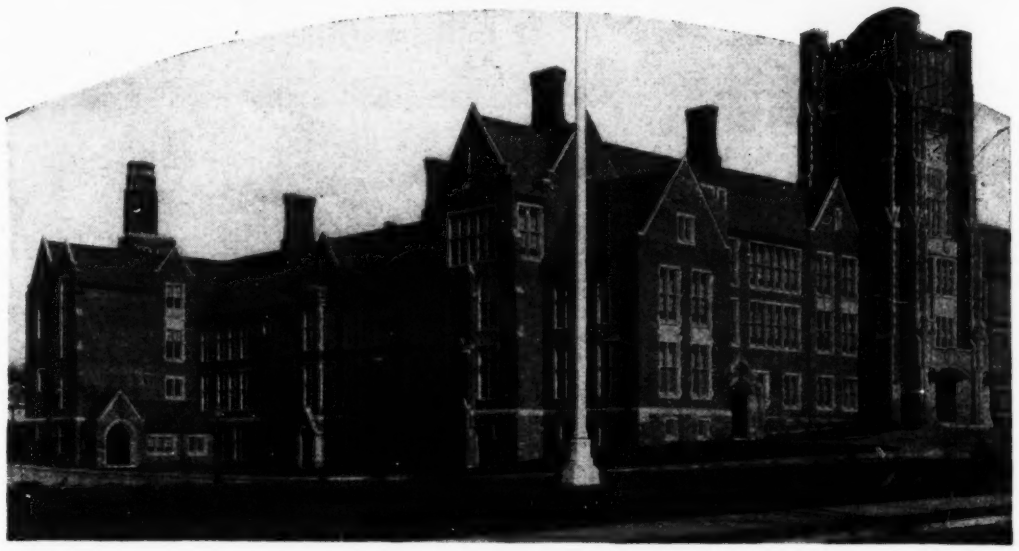

Guilbert and Betelle, Architects

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Maplewood and South Orange are proud of their new school, erected at a cost of one million five hundred thousand dollars, exclusive of land and equipment. Only the best materials are used.

The Light Ecru Hartshorn Joanna Cloth Window Shades, mounted on Hartshorn Rollers, dress the exterior and interior as well, complementing the impressive Gothic architecture and superlatively modern interior fitments. Joanna Cloth was specified because it is durable, beautiful, and diffuses a soft, clear light, to make study easy and protect the young eyes of the students.

STEWART HARTSHORN CO., 250 Fifth Avenue, New York City

Hartshorn Est. 1860

SHADE ROLLERS *and* WINDOW SHADE CLOTH

(Continued from Page 94)

17. Janitors must exercise due care to see that there is no waste in the use of supplies, gas, water, coal, and electricity.

18. Janitors may not leave their buildings during school hours, without the permission of the principal.

19. Janitors must clean erasers and blackboards at least once each week, and must keep the pencils sharpened for the first-grade room.

20. Janitors must perform such other duties as they may be called upon to do.

21. Janitors must not allow any accumulation of papers or rubbish in the basements of their buildings.

22. Any willful neglect on the part of any janitor in carrying out the rules of the board, or the principal of the building, will be deemed a sufficient cause for the janitor's dismissal.

23. The daily observation of the careful janitor must carry a janitor far beyond the actual requirements implied in these rules and regulations.

RULES GOVERNING THE USE OF SCHOOL PROPERTY IN CINCINNATI

The board of education of Cincinnati, Ohio, has adopted rules to govern the use of school property under the care and protection of the board. The rules read as follows:

Name of Department and Duties of the Director

1. All matters relating to the use of school property or school name insofar as these rules may apply shall be under the jurisdiction of a department of the superintendent's office. This department shall be known as the department of evening activities. The director of this department shall have general charge of the evening use of the buildings, the direction of evening activities, and such day and evening use of the school property as provided or hereafter may be provided by the board of education, subject to the assignment of the superintendent of schools.

Basic Principles Underlying the Functions of the Department

2. In establishing the department, the board is seeking to extend and develop a use of the schools that will make for the social, civic, educational, and recreational welfare of the entire community and all its people; that will strengthen the home without undermining its influences; that will provide wholesome and well-regulated social and recreational activities for young people; that will stimulate a desire for increased education and will furnish educational opportunities for all who may desire them; that will help to develop a spirit of mutual respect and understanding, and that will lead to deeds of goodwill and neighborly kindness; that will incite to a greater and more intelligent participation in civic affairs; that will encourage the foreign-born to learn the language and become citizens of the country of their adoption, imbued with its spirit of justice and liberty, and controlled by an intelligent appreciation of its laws and institutions; and above all that will make for genuine democracy by bringing all the people together without distinction of race or color or creed, in the one common meeting place—the schoolhouse of the people—where all may meet as equals upon common ground, thus helping to make the public school a greater institution for the development and protection of democracy—not only for the education of the children, but of the citizens themselves.

To secure these results, the board believes it to be necessary to establish firmly the principle that the use of the schoolhouse must always be considered as a community use, with all having equal rights and privileges, and where there shall be no use that can be considered as personal, private, secret, exclusive, sectarian (propaganda, instruction, or worship), or for commercial gain.

The Use of School Property

3. Any organization, group, or person not connected with the schools desiring the use of the school property during the day, shall file with the superintendent of schools or his authorized representative, an application approved by the principal of the school.

4. Should the evening use of any school property be desired by any organization, group or person, an application approved by the principal of the school shall be filed with the superintendent of schools or his authorized representative.

5. The principal of a school may permit the school buildings to be used during the day for school commencement, school entertainments, teachers' meetings, mothers' clubs, or for affairs given by other school organizations. When such use is made before 5:00 p.m., no permission from the superintendent's office shall be necessary.

6. The principal of a school may permit the mothers' club or a school organization to have entertainments for pay, take collections, or conduct sales between the closing hour of school and 5:00 p.m., without obtaining a permit from the superintendent's office.

7. The use of school buildings to coach pupils for

(Continued on Page 102)

A GROUP OF KINDERGARTEN PUPILS ENROLLED IN A SOUTH BEND, IND., SCHOOL ENJOY A GARDEN COURT

A court fitted with a pergola is ideal for vacation and playground classes which give the school authorities full opportunity for justifying the investment.

There's a Durabilt Locker

When selecting steel locker equipment for a new school, an addition, or for one that is being re-furnished or provided with additional facilities, the most satisfactory results will follow only when the correct type and size of locker is installed for each particular storage requirement.

There are definite types and sizes of Durabilt Steel Lockers for every school use. The illustrations display a few of the many outstanding and popular ones that are giving satisfaction in prominent schools in every locality.

The recessed type is most practical and desirable where the construction of the building will permit a recessed installation. In designing new buildings and additions this feature is usually given careful consideration. However, there are many buildings where lockers cannot be recessed, then free standing lockers can be placed in corridors, alcoves, or separate locker rooms.

Full length, single tier, clothing lockers provide the maximum storage service. Double tier lockers are handy where floor space is limited and small pupils are the users but we usually recommend the Durabilt Two-in-One type or the Two Person Locker as illustrated below because of the greater hanging capacity, etc.

Multiple Tier (Box) Lockers have a wide field of usefulness in gymnasiums, classrooms and vocational departments. They admirably fill the need for small storage space for shoes, togs, books, tools, and work materials. Many school authorities prefer them to racks in connection with basket storage because of their security features.

Storage Lockers with adjustable shelves provide exceptionally handy storage for school supplies of all description. A unit placed in each classroom will often solve the problem of how to reduce losses of stationery supplies, etc., that must always be kept available for ready use.

Manual training departments, vocational schools, etc., have many storage demands that can be filled by installing several Cord and Tool Lockers for the various shops and stock rooms.

Shoe Lockers, either single tier or double tier, are often recessed in the gymnasium walls where they are out of the way yet easily accessible for members of gym classes who may require only gym shoe storage.

Where more spacious gym storage is required then an installation of gym lockers as illustrated is exceptionally efficient and conserving of floor space.

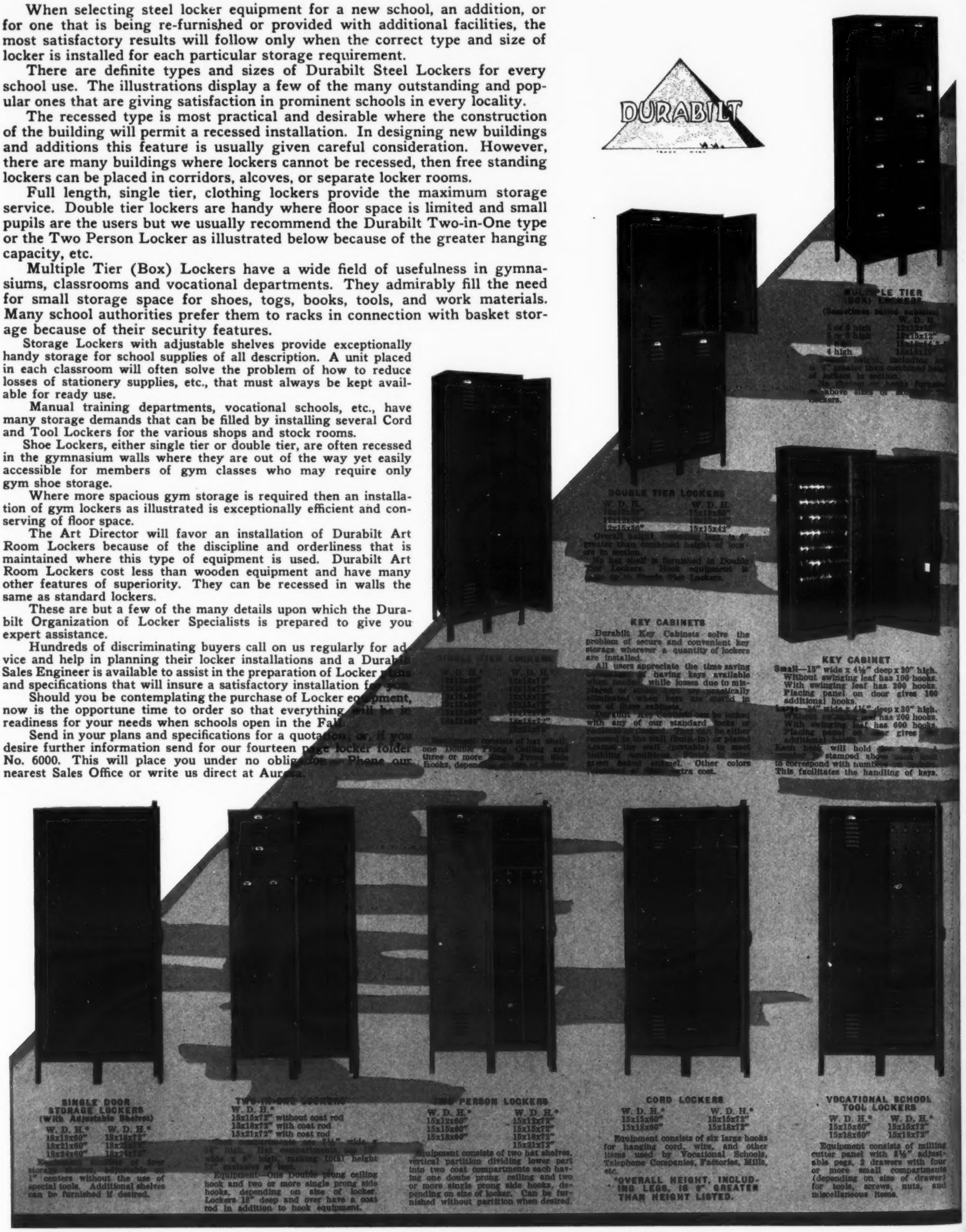
The Art Director will favor an installation of Durabilt Art Room Lockers because of the discipline and orderliness that is maintained where this type of equipment is used. Durabilt Art Room Lockers cost less than wooden equipment and have many other features of superiority. They can be recessed in walls the same as standard lockers.

These are but a few of the many details upon which the Durabilt Organization of Locker Specialists is prepared to give you expert assistance.

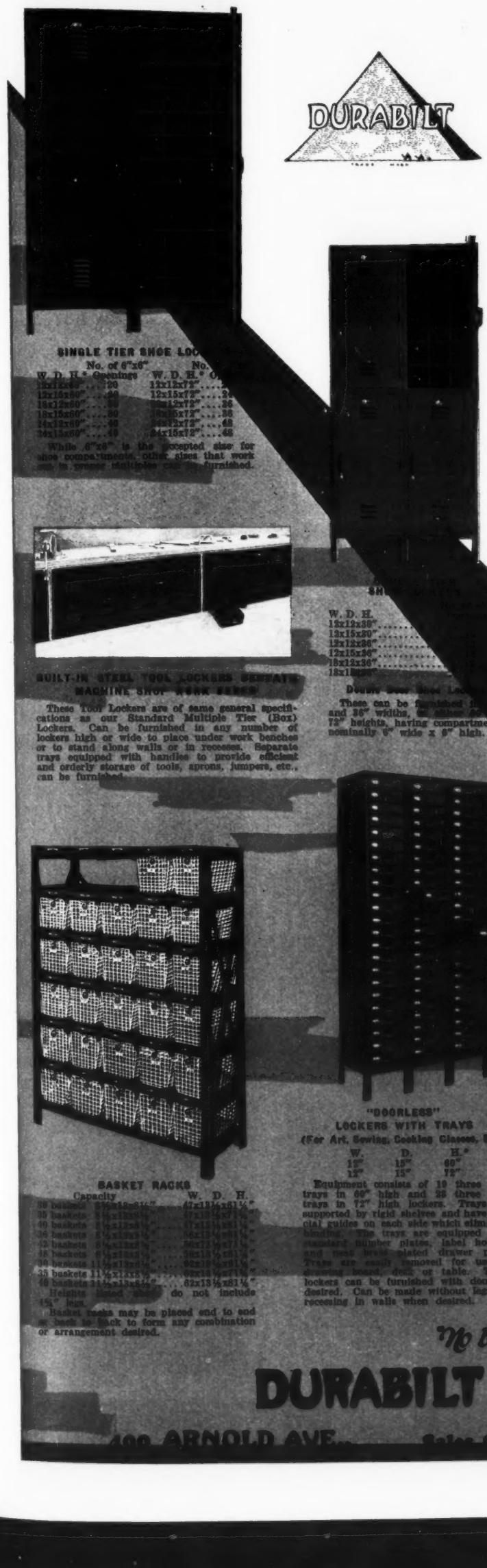
Hundreds of discriminating buyers call on us regularly for advice and help in planning their locker installations and a Durabilt Sales Engineer is available to assist in the preparation of Locker plans and specifications that will insure a satisfactory installation for you.

Should you be contemplating the purchase of Locker equipment, now is the opportune time to order so that everything will be in readiness for your needs when schools open in the Fall.

Send in your plans and specifications for a quotation; or, if you desire further information send for our fourteen page locker folder No. 6000. This will place you under no obligation. Phone our nearest Sales Office or write us direct at Aurora.


DURABILT
MULTIPLE TIER (BOX) LOCKERS
(Sometimes called cabinets)
W. D. H.
5 or 6 high 12x15x12"
5 or 6 high 15x15x12"
4 high 18x15x12"
Overall height, including legs, is 9" greater than combined height of lockers in section.
No shelves or hooks furnished in above sizes of Multiple Tier Lockers.
DOUBLE TIER LOCKERS
W. D. H. W. D. H.
15x12x60" 15x12x72"
15x15x60" 15x15x72"
15x18x60" 15x18x72"
12x15x16" 15x15x42"
Overall height, including legs, is 9" greater than combined height of lockers in section.
No hat shelf is furnished in Double Tier Lockers. Hook equipment is same as in Single Tier Lockers.
KEY CABINETS
Durabilt Key Cabinets solve the problem of secure and convenient key storage wherever a quantity of lockers are installed.
All users appreciate the time saving convenience of having keys available when needed, while losses due to misplaced or stolen keys are practically eliminated when keys are stored in one of these cabinets.
Durabilt Key Cabinets can be locked with any of our standard locks or padlocks. They can be either recessed in the wall (built-in) or placed against the wall (portable) to meet building conditions. Finish is white green baked enamel. Other colors furnished at extra cost.
KEY CABINET
Small—15" wide x 4½" deep x 30" high. Without swinging leaf has 100 hooks. With swinging leaf has 200 hooks. Placing panel on door gives 100 additional hooks.
Large—24" wide x 4½" deep x 30" high. Without swinging leaf has 200 hooks. With swinging leaf has 600 hooks. Placing panel on door gives additional hooks.
Each hook will hold [illegible] stamped above hooks to correspond with numbers on keys. This facilitates the handling of keys.
SINGLE DOOR STORAGE LOCKERS (With Adjustable Shelves)
W. D. H.* W. D. H.*
18x15x60" 18x15x72"
18x21x60" 18x21x72"
18x24x60" 18x24x72"
Equipment consists of four storage shelves adjustable 1" centers without the use of special tools. Additional shelves can be furnished if desired.
TWO-IN-ONE LOCKERS
W. D. H.*
15x15x72" without coat rod
15x18x72" with coat rod
15x21x72" with coat rod
Hat compartments are 6½" wide x 8" high. Hat compartments are 6½" wide x 8" high, making total height 84" exclusive of legs.
Equipment—One Double prong ceiling hook and two or more single prong side hooks, depending on size of locker. Lockers 18" deep and over have a coat rod in addition to hook equipment.
TWO PERSON LOCKERS
W. D. H.* W. D. H.*
15x12x60" 15x12x72"
15x15x60" 15x15x72"
15x18x60" 15x18x72"
15x21x72"
Equipment consists of two hat shelves, vertical partition dividing lower part into two coat compartments each having one doube prong ceiling and two or more single prong side hooks, depending on size of locker. Can be furnished without partition when desired.
CORD LOCKERS
W. D. H.* W. D. H.*
15x15x60" 15x15x72"
15x18x60" 15x18x72"
Equipment consists of six large hooks for hanging cord, wire, and other items used by Vocational Schools, Telephone Companies, Factories, Mills, etc.
*OVERALL HEIGHT, INCLUDING LEGS, IS 9" GREATER THAN HEIGHT LISTED.
VOCATIONAL SCHOOL TOOL LOCKERS
W. D. H.* W. D. H.*
15x15x60" 15x15x72"
15x18x60" 15x18x72"
Equipment consists of milling cutter panel with 8½" adjustable pegs, 2 drawers with four or more small compartments (depending on size of drawer) for tools, screws, nuts, and miscellaneous items.

for Every Requirement


DURABILT
SINGLE TIER SHOE LOC
No. of 6"x6" Openings
W. D. H.
12x15x72"
18x15x72"
24x15x72"
30x15x72"
While 6"x6" is the accepted size for shoe compartments, other sizes that work out in proper multiples can be furnished.
BUILT-IN STEEL TOOL LOCKERS
MACHINE SHOP WORK BENCH
These Tool Lockers are of same general specifications as our Standard Multiple Tier (Box) Lockers. Can be furnished in any number of lockers high or wide to place under work benches or to stand along walls or in recesses. Separate trays equipped with handles to provide efficient and orderly storage of tools, aprons, jumpers, etc., can be furnished.
W. D. H.
12x12x30"
12x15x30"
12x15x36"
15x12x36"
18x12x36"
Double Door Shoe Lo
These can be furnished
and 36" widths,
72" heights, having compartme
nominally 6" wide x 9" high.
ASIUM LOCKERS
Compartments
Tier Arrangement
Tier Arrangement
Arrangement
Arrangement
rangement
A complet
with multiple
sections of 1,
Padlocks are
Equipment—Eac
Small compartment
double prong ceiling
standard single tier lo
partments are multiple
single tier locker
ing on size) in
lockers.
at shelf.
ave one
hooks
are
BASKET RACKS
Capacity W. D. H.
35 baskets 47x13½x81¼"
40 baskets 47x13½x81¼"
36 baskets 56x13½x81¼"
42 baskets 56x13½x81¼"
48 baskets 56x13½x81¼"
30 baskets 62x13½x81¼"
35 baskets 62x13½x81¼"
40 baskets 62x13½x81¼"
Heights listed above do not include 4½" legs.
Basket racks may be placed end to end or back to back to form any combination or arrangement desired.
"DOORLESS"
LOCKERS WITH TRAYS
(For Art, Sewing, Cooking Classes, Etc.)
W. D. H.
12" 15" 60"
12" 15" 72"
Equipment consists of 19 three inch trays in 60" high and 23 three inch trays in 72" high lockers. Trays are supported by rigid shelves and have special guides on each side which eliminate binding. The trays are equipped with standard number plates, label holders and neat brass plated drawer pulls. Trays are easily removed for use at drawing board, desk or table. These lockers can be furnished with doors if desired. Can be made without legs for recessing in walls when desired.
LOCKER ROOM BENCH TOPS AND BENCH
In order to extend complete service to our custo
prepared to furnish Bench Tops and Bench Ped
required as a necessary part of locker equipment.
customers prefer to purchase their benches locally, wh
want us to furnish them.
BENCH TOPS
Yellow pine seems to be the most popular wood for loc
benches and unless otherwise specified we will always furnis
B. Durabilt Bench Tops are carefully sanded, with corner
and edges nicely rounded, and are finished with a coat of
shellac. Ordinarily tops are furnished in 6', 8', 10', or 12'
lengths, either 8", 10", or 12" wide and 1⅛" or 2" thick.
the dimensions for width and thickness are nominal, the
finished tops are slightly under these sizes.)
PEDESTALS
Strong and rigid Pedestals of our own special design are made with heavy cast iron base and top approximately 7" in diameter and a strong tubular column 1⅝" in diameter. The standard overall height is 16½". Other heights can be furnished.
All basket
Caster equi
and two swivel

Prominent Construction Features

1—**Rigid Door Frame.**—1"x1"x⅛" hard steel angle uprights. 1½"x¾" No. 14 gauge formed steel channel cross members securely joined to uprights at each end by two ⅛" counter-sunk head rivets, as riveting for this purpose is much stronger than welding. (Since *the strength of any locker is dependent on the rigidity of the door frame*, it will pay you to look into this point carefully when selecting locker equipment.)

2—**Scientifically Reinforced Door.**—The illustrations of "Door Construction" and "Top Construction" show full-length tubular reinforcements on vertical edges of door, also hemmed flanges as used on both top and bottom of door. (No danger of bottom flange of door being bent out of shape by stepping on it.) Corners of door are securely tied together by means of arc welding.

3—**Quiet Automatic Latching Device.**—(No metal to metal contact when door is being closed.) This Patented, Tamper-proof Latching Device is *Concealed* inside the vertical tubular reinforcement of door.

4—**Patented Stamped Steel** (not cast) **Straight-Lift Handle.**—With curled grip which provides ample space for comfortable hand-hold.

5—**Padlocking Attachment with Rubber Silencers.**—Arranged for use of any standard padlock; and in addition, is designed with two rubber silencers so that noise is practically eliminated when handle is raised or lowered.

6—**Reinforced, full looped** (metal formed completely around pin), **five-knuckle, Strap Hinge.** — Attached to door with two Binder Head bolts, permits door to open approximately 180 degrees. Three each on single tier and double tier standard lockers. The hinges are riveted to the door frame directly opposite the lock fingers as this gives added security. Hinge pins are embedded in angle so they cannot be driven out, neither would the removing of hinge bolts make it possible to enter the locked locker without a key.

7—**"Safety" Type Ventilating Louvres.** — (So designed as to prevent anyone injuring themselves on them.) Louvres are 4½" wide, with ⅛" opening and are 1½" apart, center to center.

8—**Reinforcing Plate Under Hinge.**—(This is a No. 14 gauge plate welded to inside of door which serves as an added protection against exceptionally rough treatment.)

9—**Improved Lock Fingers with Rubber Silencers,** —which reduce noise from slamming of doors.

10—**Automatic Locking Bar Release.**—(Closing of door automatically releases locking bar, permitting it to drop quietly into locked position.)

11—**Lock is attached to inside of door, without exposed bolt heads,**—which eliminates all opportunity of chiseling off bolts to gain access with malicious intent.

12—**All Coat Hooks attached with two screws**—making it impossible to twist off by hand or remove without use of tools. Udylite Rust-proof finish.

13—**Perfect Fitting Top and End Finishing Strips**—attached by means of concealed screws. (By far the neatest and most attractive trim ever furnished for recessed locker installations.)

14—**Attractive Brass Number Plates.** — Each locker furnished with polished brass number plate with black filled depressed numbers ⅜" high. Plates securely attached with split rivets (not screws) making stealing of them very difficult.

15—**Flush Bottom.**—(Easily cleaned and built strong enough so that standing on Bottom will not injure it.)

16—**Adjustable Rear Legs.**—(Very desirable for leveling up rear of lockers when floors are uneven.)

17—**Adjustable Front Feet.**—(Permit anchoring and taking up of irregularities due to floor unevenness.)

18—**All Screws and Nuts rust-proofed by the Parker Process.**—(This precaution eliminates possibility of getting rust spots on clothing.) All outside screws are of the slotless binder head type.

19—**Binder Head Hinge Bolts with Knurl under Head. Two to each Hinge.**—(Hold door securely and do not work loose in every-day use.)

20—**Curled Front Edge on Shelf.**—(No danger of injury by children hanging on them.)

21—**Right Hand Swinging Doors.**—Doors are hinged to swing to the Right (not left) as this is the logical way for right-handed people to open them.

22—**Attractive "Satin Texture" Enamel Finish.** — Baked on at proper temperature to insure finest appearance and durability. (Will stand rigid hammer test without flaking.) All parts thoroughly cleaned before enamel is applied.

"No better built than Durabilt"

DURABILT STEEL LOCKER CO.

400 ARNOLD AVE. Sales Offices in all Principal Cities AURORA, IL

Let Durabilt Steel Cabinets

A need has existed, for years, in the Educational Field, particularly in Vocational and Technical High Schools, for a well rounded out line of Steel Storage and Wardrobe Cabinets which would permit a multiplicity of interior equipment combinations for various storage applications.

In response to these apparent needs the Durabilt Organization of "Storage Specialists" designed a Quality Line of Cabinets which embody all of those features so desirable for efficient and economical storage in the modern school.

The illustrations shown here depict but a few of the thousands of uses and are presented to help visualize what can be done in the arrangement of interiors with standard interchangeable units and equipment.

Durabilt Steel Cabinets are unlimited in application. Their range of uses is so wide, due to the numerous sizes available and combinations of adjustable interior equipment, that they readily solve all storage problems.

Durabilt Steel Cabinets are made throughout of No. 20 gauge full cold rolled, patent leveled enameling steel. The use of this heavy steel, scientifically fabricated, permits the storing of heavy loads in any Durabilt Cabinet. (Note illustration of a Double Door Tool Cabinet, bottom of page at right, which shows a 78" cabinet rigidly supporting more than 1000 lbs. of dies, jigs, etc.)

It is real economy to buy Durabilt Steel Cabinets because, year in and year out they will withstand the hard use and abuse to which school storage equipment is subjected. Then too, there is no wasted space, because a Durabilt Cabinet, properly selected, enables the full and complete utilization of the storage space it provides.

Because Durabilt Cabinets are built on the unit principle, in a wide and sufficient range of sizes to meet all requirements, they eliminate all problems that formerly arose with wood cabinets when necessary to re-locate them due to changes in classrooms, shops, or layout. They can readily be moved to a different location without tearing the cabinet down or removing the contents, and the interior equipment can easily be rearranged to suit changed requirments. This feature is lacking in built-in wooden equipment.

We would appreciate an opportunity of working with you on your storage plans and to offer detail suggestions as to the exact Durabilt Steel storage equipment to satisfactorily fill your requirements.

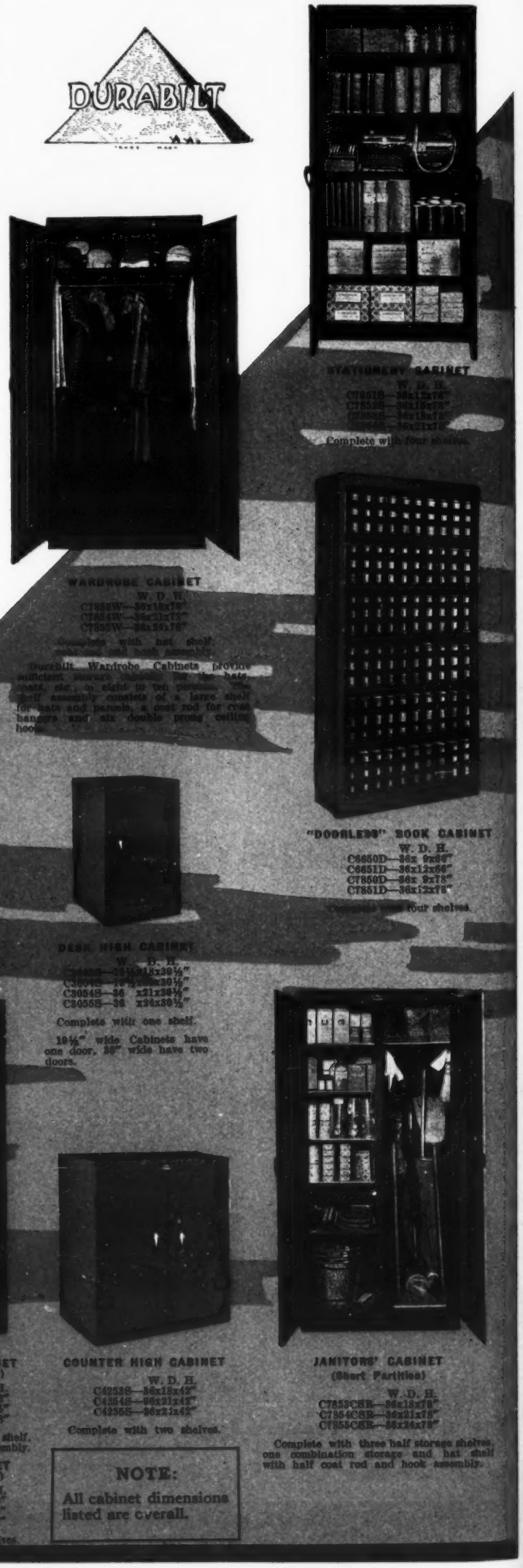
Durabilt Steel Cabinets, in standard sizes are carried in stock for prompt shipment. If you desire further information and prices write for a copy of Folder No. 5050 or we will be glad to quote prices on those items which require special equipment. Write us direct at Aurora or phone our nearest Sales Office. No obligation, of course.

TEACHERS' CABINET
(Full Height Partition)

Left-hand Wardrobe Compartment	Right-hand Wardrobe Compartment
W. D. H.	W. D. H.
C7853CFL—36x18x78"	C7853CFR—36x18x78"
C7854CFL—36x21x78"	C7854CFR—36x21x78"
C7855CFL—36x24x78"	C7855CFR—36x24x78"

Complete with four half storage shelves and one-half wardrobe shelf with coat rod and hook assembly.

In classrooms, laboratory and elsewhere a Teachers' "Combination" Cabinet is extremely valuable for the economical storing of stationery supplies, books, drawing materials, apparatus, etc. There is also plenty of room provided for the wraps and other personal belongings of several people in the coat compartment.



COMBINATION CABINET
(Short Partition)

W. D. H.
C7853CSL—36x18x78"
C7854CSL—36x21x78"
C7855CSL—36x24x78"

Complete with three half storage shelves, one combination storage and hat shelf with half coat rod and hook assembly.

STORAGE CABINET

W. D. H.
C6651S—36x12x66"
C6653S—36x18x66"
C6654S—36x21x66"

Complete with four shelves.

These are many places where storage cabinets are required for the storing of files, books, ledgers, office appliances, miscellaneous stationery and other articles that do not need expensive, fire-proof vault storage.

WARDROBE CABINET
(With Single Door)

W. D. H.
C6603W—19½x18x66"
C6604W—19½x21x66"
C7804W—19½x21x78"

Complete with hat shelf, coat rod and hook assembly.

STORAGE CABINET
(With Single Door)

W. D. H.
C6603S—19½x18x66"
C6604S—19½x21x66"
C7804S—19½x21x78"

Complete with four shelves.

COUNTER HIGH CABINET

W. D. H.
C4253S—36x18x42"
C4254S—36x21x42"
C4255S—36x24x42"

Complete with two shelves.

NOTE:
All cabinet dimensions listed are overall.

JANITORS' CABINET
(Short Partition)

W. D. H.
C7853CSR—36x18x78"
C7854CSR—36x21x78"
C7855CSR—36x24x78"

Complete with three half storage shelves, one combination storage and hat shelf with half coat rod and hook assembly.

Solve Your Storage Problems

Outstanding Construction Features

CABINET doors, back, top, bottom, sides, and storage shelves are of full cold rolled patent leveled No. 20 gauge enameling steel—rolled to our own specifications.

The door frame is made by interlocking the top, bottom and sides. It is offset where doors overlap, assuring a close fit. Doors are reinforced in center with full length panel, spot welded to inside, which makes them exceptionally strong and rigid. The front, sides, and top are free from unsightly bolt heads or screws. These features make Durabilt Cabinets unusually secure, dust-proof, fire-retarding and vermin-proof.

Positive Locking Device and Handle: The locking device consists of a special, triple action, straight throw mechanism operated by an attractively designed nickel plated lever type handle. Vertical locking bolts which are concealed in tubular reinforcement engage holes at top and bottom of door frame while a heavy, horizontal bolt locks doors at center.

Secure Locks: Durabilt Steel Locker Co. special cabinet locks are standard on all cabinets with doors. Locks are so attached that it is impossible to chisel bolts off when doors are locked.

Exceptionally Strong Hinges: Our special design strong strap hinge is so attached that no bolt heads appear on exterior of doors. The hinge construction also *permits doors to open all the way back against sides so as not to take up valuable aisle space.*

Attractive Color Finish: The rich "Satin Texture" olive green finish on Durabilt Cabinets which harmonizes with any interior trim, makes them both permanently beautiful and dignified in appearance. (Other colors may be had at slight extra cost.)

Complete Range of Sizes: Durabilt Cabinets are available in various widths, depths and heights, and the line covers cabinets in both one and two-door types as well as cabinets without doors. All Cabinet dimensions listed are overall. Door openings are 3 inches less in width and 7 inches less in height than nominal dimensions given under illustrations.

CUT CABINET

The Durabilt Cut Cabinet is ideal for the storage of halftones, electros and similar necessities used in the print shop of every Vocational School. Equipment consists of type high sliding trays with tilting suspension adjustable up and down on 2" centers. As many or as few trays as needed may be ordered and additional trays provided to meet requirements from time to time. Storage shelves can be placed in Cut Cabinets to utilize space not required for cut storage. (For further description see Blue Print, Map and Plan Cabinets, this page.)

DOUBLE TIER SINGLE DOOR STORAGE CABINET

This type is same construction as our standard single door cabinets except it is built double tier. It is highly recommended for storage of paint room supplies, etc., and for other purposes where short storage openings are required and floor space is limited. These cabinets are usually made 19½" wide x 12", 15" or 18" deep by 78" high overall. Two storage shelves for each opening is standard equipment but because of the features of construction more can be added as required.

"DOORLESS" CABINET

W.	D.	H.	W.	D.	H.
C6658D—	36x18x66"		C7858D—	36x18x78"	
C6654D—	36x21x66"		C7854D—	36x21x78"	

Complete with four shelves.

MAP AND PLAN CABINET

30½, 42, 66, or 78 in. high ov

Any size Durabilt Steel Cabinet may be equipped w
with tilting suspension for the safe and convenient storage
prints, charts, graphs, photographs, decalcomania, printing
bits, screws, etc., and thousands of other items.

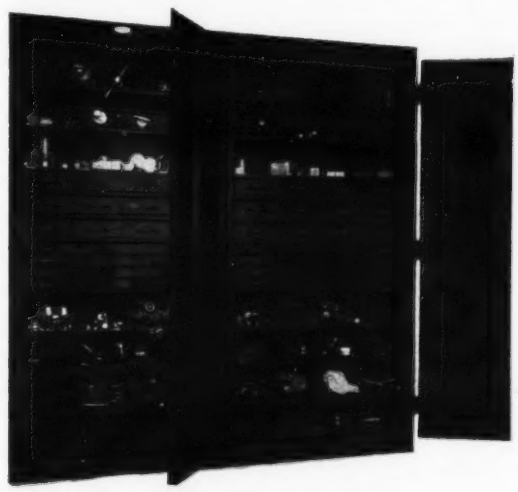
Sliding trays are furnished in 2 and 3 in. depths and dr
and 12 in. depths overall. They can be perforated for attaching
back partitions—thus making it easy
items of various
Accidental pulling out of the tr
pressed by the Durabilt concealed t
easily released by a pull away with
As many or as few trays or drawers can
Durabilt cabinet as present needs would
can be added later as the demand arises.

Neat brass plated drawer pulls are a
Durabilt trays and drawers. A label holde
furnished so that they may be marked for read
ence. Trays and drawers can be equipped with
pressed steel hinged flap in front and hood in re
hold blue prints, maps, drawings, papers and sim
in place. Locks can also be furnish
on trays and drawers 2" or higher.

"DOORLESS" TOOL CABINET

W.	D.	H.
C4251D—	36x12x42"	
C4253D—	36x18x42"	
C4254D—	36x21x42"	

Complete with two shelves.



A GROUP OF TWO CABINETS, ONE DOORLESS, ONE DOUBLE DOOR FOR TOOLS

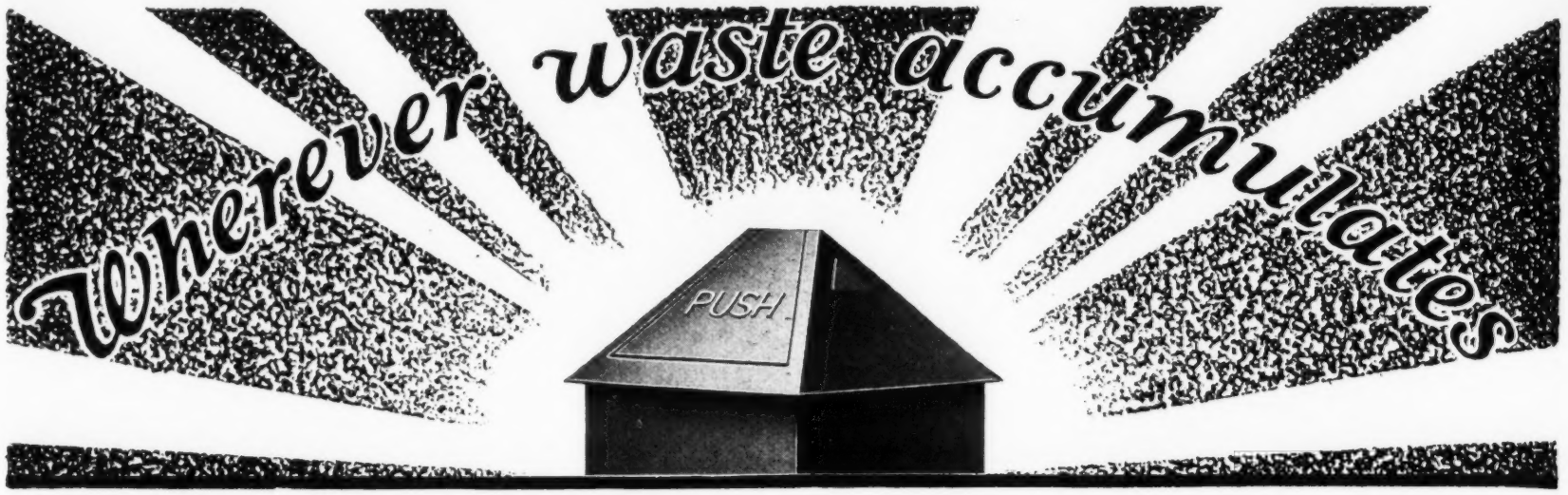
This is another adaptation of Durabilt Steel Cabinets to Tool Room Storage needs. The illustration shows how a "Doorless" Cabinet and a "Double Door" type can be used side by side providing both closed and open storage for the hundreds of items used in auto shops of Vocational Schools. The wide trays are for tool bits, taps, reamers, etc., while the narrow drawers are used for storage of screws, bolts, springs and various machine parts. Interior equipment is interchangeable and the cabinets can be moved to any part of the building any time to fit in with any changes of instruction or storage demands.

The illustratio
able storage shelv
pounds of tools,
and interior equipm

"No better built than Durabilt!"

DURABILT STEEL LOCKER CO.

400 ARNOLD AVE



SOLAR *Self-Closing* RECEPTACLES

The SOLAR is the ideal waste receptacle for school use. Its simple construction and the unique fool-proof design of its automatic, gravity-operated, self-closing cover guarantees long life and trouble-free service. When divided by years of use, its cost is exceedingly low.

The patented cover is the secret of SOLAR popularity. With only one moving part (the cover itself) the SOLAR is almost human in its action. At the touch of a finger the top silently opens to receive waste material and, upon receiving it, instantly closes again to seal its contents against fire and contamination. There's fascination in that automatic cover, too. Everyone from the little tot in kindergarten on up to the senior students and teachers finds it easy, natural and a delight to deposit waste in the inviting SOLAR.

SOLARS are available in nine different sizes and are finished in gray, green, white and grained mahogany. There is a style and size to meet every requirement and to harmonize with any surroundings.

SOLAR - STURGES MFG. CO.
MELROSE PARK, ILLINOIS

(Continued from Page 97)

pay or to hold private classes of any kind, shall not be permitted without the approval of the superintendent of schools.

8. Extracurricular classes for the pupils of the school or for others may be permitted by the principal to meet in the school building during and after regular school hours, provided such classes have been approved by the superintendent of schools and provided the qualifications and the compensation of the instructors are in accordance with the rules of the board of education (extracurricular classes are those classes which are not a part of the regularly organized school curricula).

9. School buildings may be used upon the payment of a rental and janitorial fee by organizations or individuals for recitals or other forms of legitimate entertainments of community value when the public is invited and no admission fee is charged, or contribution asked. However, no one organization or individual shall be permitted to use a school building more often than twice each year for such purposes; nor shall recitals be permitted unless the majority of the members of the class are residents of the school district.

When a recital is given by a teacher who has her classes in the public-school building, but is under the supervision of the board of education, no rental charge shall be made, but the janitorial fee must be paid. Charges may be made for this type of recital, but all the proceeds shall be turned over to the principal of the school, and shall be used for the benefit of the school.

10. School buildings may be used for university-extension education courses given for the benefit of teachers or the community, when the request for such courses comes from the teachers or the community and is open to all the members of the community, and when such use does not involve additional expense. Should the building be opened, however, at a time that requires additional expenditure for janitorial service, the instructor or group shall assume the janitorial fee fixed for such opening. In all cases, the nature of the courses given, the fee charged, and the instructor giving the course, shall be approved by the superintendent. It is also clearly understood that such use of the schools shall not be sanctioned primarily for the financial benefit of the instructor, but is to be justified in all cases as meeting the desire on the part of the teachers or the community for professional or cultural improvement. When the superintendent is convinced that such a purpose is to be served, there shall be no rental or other charge except for additional janitorial service. When the superintendent does not believe that this is the purpose of the course, the use of the school shall not be sanctioned, except upon a rental basis in accordance with the rules governing such use.

11. Each application for the use of a school building shall be made on a blank form provided by the superintendent of schools and obtained from either the principal of the school or the director of evening activities. All such applications shall then be submitted to the board of education as a part of the superintendent's report. No application for such use of a building shall be considered unless indorsed by the day-school principal in charge of the said building. Application for the use of a building regularly occupied by an evening school or community center in charge of an evening principal or a secretary shall also be indorsed by the evening-school principal or the secretary, when the use of a building is desired after 5:00 p.m., on the evening that the evening school or community center is using the building. The day school, however, shall have priority in the use of such parts of the building which it occupies as are not occupied regularly for evening activities. In cases where the policy of the board of education is established, the use of buildings may be granted by the superintendent of schools, or by the director of evening activities acting as a representative of the superintendent. No building shall remain open for any purpose later than 11:00 p.m., except by permission of the superintendent.

The principal shall be held responsible for notifying the janitor whenever the school is to be used. That there may be avoided any possibility of error because of a delay in mail delivery, or through the loss of letters, the principal shall keep a record of the applications he has approved, with the date and then communicate with the director of evening activities in advance of the date of the meeting, whenever he has not received a permit granting the application which he has signed.

12. All permits for the use of school buildings shall state definitely the rooms or parts of the building that are desired, but when additional rooms are needed, the principal of the school or the director of evening activities may order the opening of such rooms. Whenever an evening principal or the secretary of a community center approved by the superintendent of schools is in charge of a building during the evening, the use of the rooms shall be at the direction of the evening principal or secretary. Such use, however, shall presuppose an agreeable arrangement with both the day principal of the building and a director of especially equipped rooms.

13. No school building shall be opened regularly for the special use of any class or group having less than 25 members with an average attendance of less than 20. A smaller number, however, may be granted the use of a room in a building which is open for other purposes, provided the smaller number does not deprive the large number of the same opportunity. No group shall be allowed the use of a room for more than two meetings a week if the room is desired by other groups. If there is a sufficient number of requests each group may be limited to a single meeting a week.

14. School buildings may be used for the discussion of topics of public interest on condition that both sides of every controversial question be given an opportunity for a hearing, either at the same or at a succeeding meeting, at which orderly discussions from the floor following the set speeches is encouraged.

15. No teacher in the employ of the board of education shall be permitted to receive compensation for extracurricular work carried on in the school, or on school premises before 5:00 p.m., unless permission has been granted by the superintendent of schools.

(Continued on Page 104)

THE MORNING AFTER
A loss of $50,000 was sustained in the burning of this school at Glens Mills, Pa.
(Int. Newsreel Photo.)

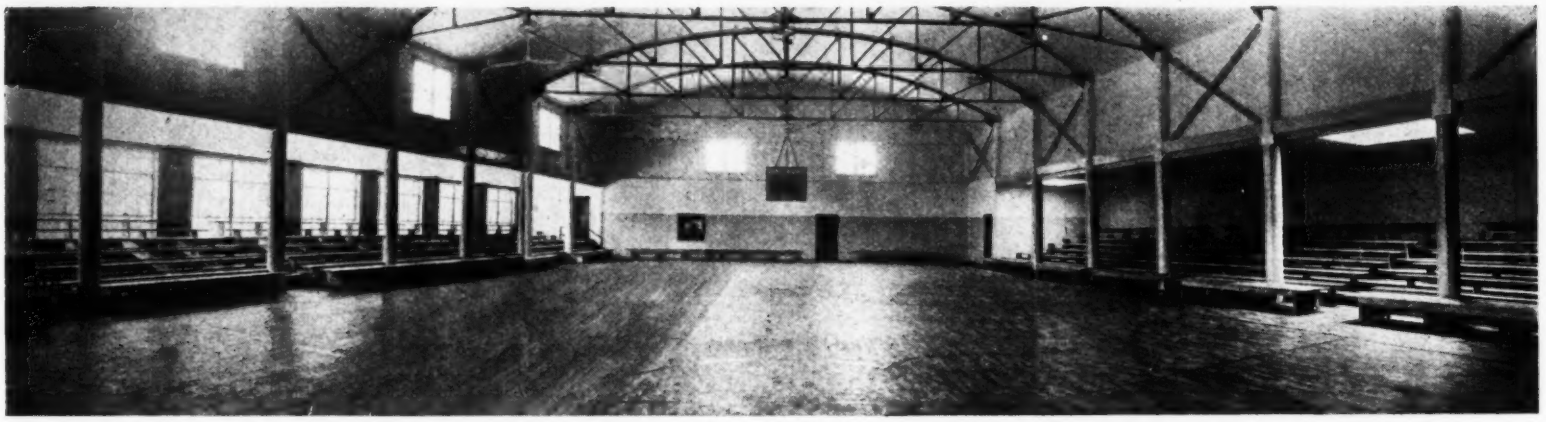
Your Decision on Heating and Ventilating Is Important . . . *Investigate Carefully*

Take time to visit schools which are using PeerVent Units, or at least write a few letters of inquiry about them. Find out how well PeerVent Units are liked — how noiselessly and efficiently they operate under varying conditions . . . Consider, too, the proven durability of PeerVent Units. Units built by this Company **eighteen years ago** are still in service and giving perfect satisfaction. The latest PeerVent machines are therefore the result of long experience — backed by the pioneer manufacturers of heating and ventilating units . . . Write for Catalogue to the Peerless Unit Ventilation Co., Inc., 718-34 Crescent Ave., Bridgeport, Conn. Please mention whether you you would like to see our local sales representative.

PEERVENT

HEATING AND VENTILATING UNITS

THIS SUMMER—
FINISH YOUR GYM FLOOR



HILLYARD'S GYMNASIUM, CONCEDED BY BASKETBALL AUTHORITIES TO BE ONE OF THE BEST IN THE COUNTRY, IS LOCATED IN ONE OF THE UNITS OF OUR PLANT.

THE HILLYARD WAY

Hillyard's Special Gymnasium Floor Finish produces a hard wearing surface. It is easy to apply and its lustrous finish can be maintained much easier than that of common floors. A strictly sanitary non-slippery floor—is a gymnasium requirement that is successfully furnished by this finish. One of our expert floor maintenance men will call at your school at your request with absolutely no obligation. His recommendations will be practical and economical.

HILLYARD CHEMICAL CO. ST. JOSEPH, MO. U.S.A.

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(Continued from Page 102)

16. Should the use of the school be desired on a legal holiday, such use is conditioned by the giving of a program that will be appropriate for such an occasion. If a holiday or seasonal vacation use is desired, such use must be approved by the superintendent and will be determined by the merits of the request. No Sunday use of the building will be permitted, except as the superintendent of schools shall decide that such use will be in keeping with the sacredness of the day. The legal holidays occurring during the school year are: January 1, February 12, February 22, May 30, July 4, the first Monday of September, October 12, November 11, Thanksgiving Day, and December 25. The statute prescribes that when the following days fall on Sunday, the succeeding Monday shall be a holiday: January 1, February 22, May 30, July 4, and December 25. This leaves October 12, November 11, and February 12 as school holidays only when they occur on a school day. The schools are not closed on the following Monday when these dates fall on Sunday.

17. Should the use of the school be desired on a Saturday during the school year, such use shall be obtained by filing with the superintendent of the schools, or his authorized representative an application approved by the principal of the school.

18. Smoking in the school building is prohibited.

19. All organizations, groups, or individuals using the school buildings must take the utmost care of the school property and make good any damage arising from the occupancy of any portion of the building. Should any damage occur, a report shall be made immediately to the principal of the school, who will report the same to the business manager of the schools.

The Use of Special Rooms or Equipment

20. No use of gymnasium, swimming pool, manual training, domestic science, kindergarten, or other rooms, where the apparatus and equipment call for special skill, intelligence, or care shall be permitted, unless approved by the superintendent of schools or an official acting for the superintendent. When permission has been granted, the supervision of such rooms shall be under the direction of a leader approved by the superintendent of schools.

Rules Governing the Raising and Disposal of Funds Obtained by the Use of the School Property or School Name

21. No school property may be used for the purpose of raising funds if the proceeds are to be divided on a percentage basis between the permit holder or the principal of the school and the person or persons employed to aid in the raising of such funds. A definite prearranged fee for services may be paid, but at no time shall this amount be out of proportion to the services rendered.

22. When permission has been granted for the use of school property or school name for the purpose of raising funds, no raffles, games of chance, such as wheels of fortune, lotto, cards, and fortune telling, or any other such scheme for obtaining money, shall be permitted.

23. All funds which have been raised by the use of the school property, or school name shall be spent for the benefit of the school. This means that no contributions from funds raised shall be made to public or local campaigns of any kind, unless sanctioned by the board of education. Neither shall presents nor gifts be made from these funds to any person whatsoever. This ruling does not restrict any organization from expending money which it has raised through dues or voluntary assessments. A mothers' club, out of funds raised, either by dues or sales, entertainments, etc., may appropriate not more than the expense money necessary for two delegates to state and district meetings. However, the money appropriated may be apportioned among any number of delegates.

24. When money is to be raised for school purposes, both the organization desiring to raise the funds and the principal of the school shall cooperate in deciding the needs for the raising of the funds.

25. When money is being raised for school purposes, the organization raising the money shall at all times confer with the principal concerning what services may be expected from both the teachers and the pupils.

26. Whenever money is to be expended by an organization that has used the school property or school name to raise funds, the principal of the school, or his representative, shall be an advisory member of the committee on expenditures.

27. A uniform system of accounting shall be used by all organizations, groups, or persons using the school name or school property to raise funds. The forms for such accounting will be provided by the board of education. Any organization or groups using the school as its meeting place, but not raising funds through the use of the school property or school name, shall not be required to comply with the rule.

28. There shall be a yearly audit before the close of the school year of the books of any organization using the school name or property to raise funds, and a statement of receipts and expenditures shall then be made to the principal who shall make it a part of his financial report to the board of education. The local school treasurer shall be a member of the auditing committee.

29. Should a mothers' club disband because of the closing of a school due to the transfer of pupils, all funds remaining in the hands of the club shall be transferred to the school or schools to which the pupils have been transferred. Should a new school be opened and some of the pupils be transferred, there shall be a proportionate transfer of funds to the mothers' club in the newly organized school. Moneys of organizations or groups disbanding, that have used the school property or school name to obtain funds, shall be turned into the local school treasury to be used for the benefit of the school.

30. Any property or material of any sort purchased by funds raised through the use of the school property or school name, shall come under the ownership and control of the board of education. No organization shall financially obligate itself in its expenditures for any amount that cannot be made within the current school year.

31. Whenever an extracurricular class meets in a school building before 5:00 p.m., and tuition charges are made, the fees shall be collected and disbursed by the principal of the school, or by the school treasurer. Should any surplus funds accrue in excess of all legitimate expenses, such funds shall revert to the school for its use. This applies also when a class organization makes use of the school property for the purpose of raising funds. Should any organization or group make use of the school property after 5:00 p.m., and charge a tuition fee, any surplus funds accruing in excess of legitimate expense, shall revert to the school. This rule, however, shall not apply to sanctioned extension courses given by universities or normal schools.

32. The management of the finances of each community center or evening school organized on a self-governing basis shall be under the direction of the local community center council and the principal of the school, who shall be responsible for receipts and expenditures of the local community center, and of its constituent clubs.

33. The local council may fix and charge membership dues, charge fees for attendance upon any group or activity supported by the local community center, and charge admission fees to entertainments. All money so collected must be used for the promotion of the work of the local community center, or paid into the treasury of the day school occupying the building in which the center meets. All dues, assessments, and admission fees, or any other money belonging to the local center shall be paid into the council treasury, and shall be disbursed only upon the order of the council or its regularly authorized officers, subject to the approval of the council and the day principal, or the local representative of the board of education. The expenses of all events to which an admission is charged, shall be subject to the approval of the director of evening activities.

34. In an evening school not organized on a self-governing basis, as described herein, the principal shall act as treasurer, or appoint a treasurer responsible to him. All money belonging to any evening school group shall be deposited with the treasurer for disbursement.

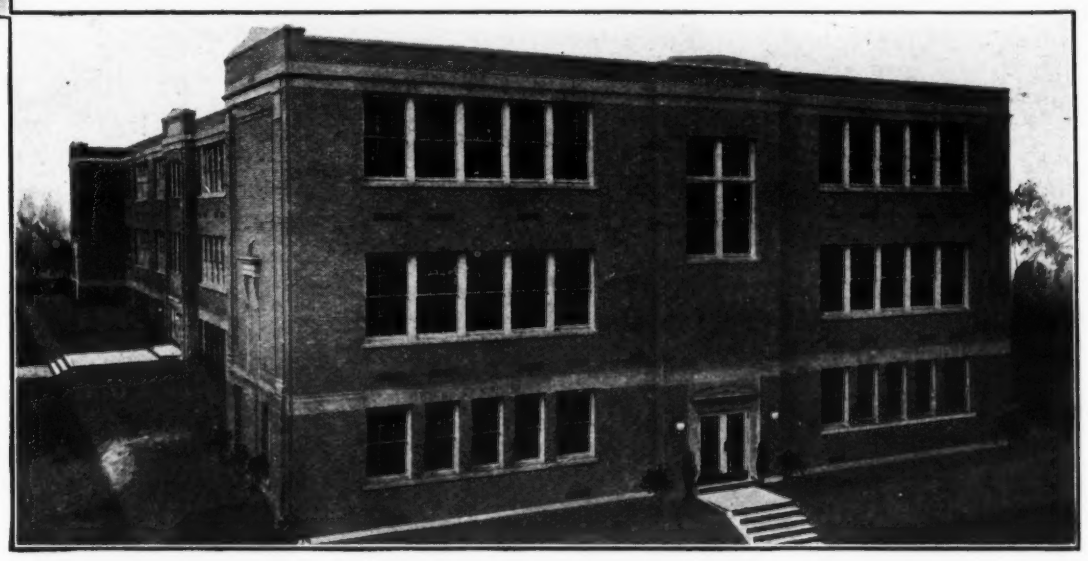
35. The treasurer of each regularly established evening school shall submit to the director of commercial education for auditing, all books, vouchers, receipts, etc., pertaining to the said office, during the first week of the opening of the day school in September. Upon the completion of this audit, a financial statement is to be rendered to the director of evening activities, and to the board of education through the superintendent of schools.

36. The principal of any day school must cause to be kept and filed with him an account of all money raised and disbursed by any organization connected with or using the school. This applies to class and school organizations, lunchrooms, kindergarten associations, mothers' clubs, community centers, and any other group or organization which uses the school or school name to collect funds through membership fees, entertainments to which admission is charged, or in any other manner. This shall not mean that the principal disburses or controls the expenditures in these organizations, except for classes and organizations directly connected with his school. It shall mean, however, that the expenditures are to be made in accordance with the terms laid down by the board of education in granting the use of the school to organizations not directly a part of the school, and the board asks and expects an accounting through the principal of the disbursement of such funds. To this end, the day-school principal shall have a right to advise with the officers of any aforesaid groups upon questions of financial policy, especially upon expen-

(Continued on Page 106)

"Maple...*no other flooring* combines so many essentials for the modern school"

R. W. Stevens, Architect, *Huntington, Ind.*



Central Grade School, Huntington, Indiana. Floored with Maple throughout.

"Maple flooring has been used throughout the Central Grade School structure and the resulting finished floors have proved satisfactory in every respect.

"No other type floor combines so many of the essentials demanded in floors for the modern school. Maple Flooring is always our first choice when selecting floors for use where warmth, low maintenance cost and appearance are prime factors."

Thus Robert W. Stevens, prominent Indiana architect, reiterates the opinions of other architects and school superintendents in every section of the country.

Back of the widespread use of Northern Hard Maple in school buildings is the fact that this is the one flooring material which combines warm, dry, cushioning comfort with the qualities of lasting wear which school use demands.

This resilient flooring material is remarkably tough-fibred and tight-grained. It will not sliver or splinter. Scuffing, youthful feet and the moving of equipment simply make it smoother with time. Northern Hard Maple, moreover, because of its permanent smoothness, is exceptionally easy to clean and keep clean. It offers no open lodging places for dust and germ-laden dirt to collect. And it permits quick, simple, permanent anchorage for seats.

Hundreds of school boards have been guided by these facts in selecting flooring. They have chosen Maple for schoolrooms, corridors, gymnasiums, assembly halls. Consult your architect about Northern Hard Maple.

MAPLE FLOORS IN COLOR—By a new special staining process—the Marietta-Murphy Finishing System—Northern Hard Maple Flooring may now be given a variety of beautiful, lasting color finishes. Standard finishes as follows:

EARLY AMERICAN	AUTUMN BROWN	DOVE GRAY	PASTEL GREEN	SEAL BLACK
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Members of the Maple Flooring Manufacturers Association have contributed many thousands of dollars and years of work to standardize and improve the manufacture and grade uniformity of Northern Maple, Beech and Birch Flooring. The following manufacturers only are licensed to use the Association Trademark MFMA. Specify MFMA on the flooring you use.

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Indiana Flooring Company (Mill at Reed City, Mich.)	New York, N. Y.
Mitchell Brothers Company	Cadillac, Mich.
Nichols & Cox Lumber Co.	Grand Rapids, Mich.
North Branch Flooring Co.	Chicago, Ill.
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Osgood & Blodgett Mfg. Co	St. Paul, Minn.
Oval Wood Dish Corporation	Tupper Lake, N. Y.
Robbins Flooring Company	Rhinelander, Wis.
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Soo Lumber Company	Glidden, Wis.
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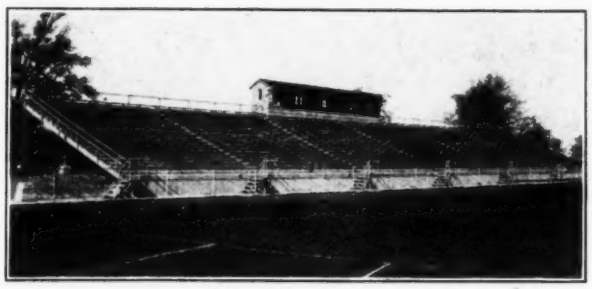
The letters **MFMA** on Maple, Beech or Birch Flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use. **MFMA**

Floor *with* Maple



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Located at Oxford, Ohio.

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GRANDSTAND

A SUPERIOR
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built entirely of
STEEL

An all-steel grandstand gives an assurance of absolute safety. Steel will not burn, or deteriorate under the action of the weather.

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Ask us about the many advantages of an all-steel grandstand and also about our time payment plan.

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THE GRANDSTAND THAT WILL MEET ALL TYPES OF DESIGNS

(Continued from Page 104)

ditures which might not be in accordance with the terms under which the permit has been granted.

Fees for the Use of the School Property

37. When school buildings are used in the evening for such purposes as school commencements, school entertainments, authorized educational meetings, annual meetings of the entire alumnal body of the school, principal's, teachers' or other school employees' educational meetings, annual meetings of mothers' clubs, or parent-teacher associations, no fee for the evening employees will be charged unless admission charges are made, collections taken, or sales conducted.

38. When school buildings are used for authorized community-center activities, sales, or entertainments to raise money for the school, community meetiugs of any kind, clubs, etc., fees for evening employees shall be paid.

39. The board of education from time to time may grant the use of the school property to certain organizations, groups, or persons, upon the payment of fees covering the actual cost to the board of education for evening employees, light, fuel, and other necessary expenses.

40. Rental for the use of school buildings, in addition to the regular janitor fees, shall be as follows:

The use of any building heated by stove or cast furnace	$ 5.00
The use of any elementary building heated by steam or hot water	10.00
The use of any junior high school	15.00
The use of any senior high school	20.00

If a building is already open for regular evening activities the rental charge for any of the school buildings shall be one half the regular fee.

41. All fees required from those who make use of the school property shall be paid in advance to the director of evening activities. Whenever it is impossible to estimate the fees in advance of the use of the property, the fees shall then be paid upon the presentation of a statement showing the cost. All money so collected by the director shall be paid monthly to the board of education and shall be accompanied by a report showing the nature of the collections.

The Payment and Duties of Engineers, Firemen, Janitors, and Helpers

42. The above employees shall be paid in all cases by the board of education, and they shall not receive any fee or further payment from any source for the opening and care of the buildings.

43. The janitor shall see that the building when used for evening activities is in a neat and clean condition before the scheduled evening or day opening. The engineer is to be on duty whenever directed by either the day or the evening principal, and is to have the building properly heated one-half hour before the scheduled opening. The janitor is also to be in the building and at the service of the evening principal or permit holder during the entire time that the building is in use. He shall render such services as are necessary. At the close of the evening or day use, the parts of the building which have been used are to be cleaned so that they are in proper condition for the following morning.

44. Should any engineer, through his negligence, fail to have the building properly heated, so that the rooms can be used for the evening or day activities, or a janitor to have the building ready for occupancy he shall be suspended, and upon a repetition of the offense may be dimissed from the service.

The Government of Community Centers

45. Groups of citizens desiring the regular use of a building for community-center purposes may organize for the purpose of promoting such activities on a self-governing basis as follows:

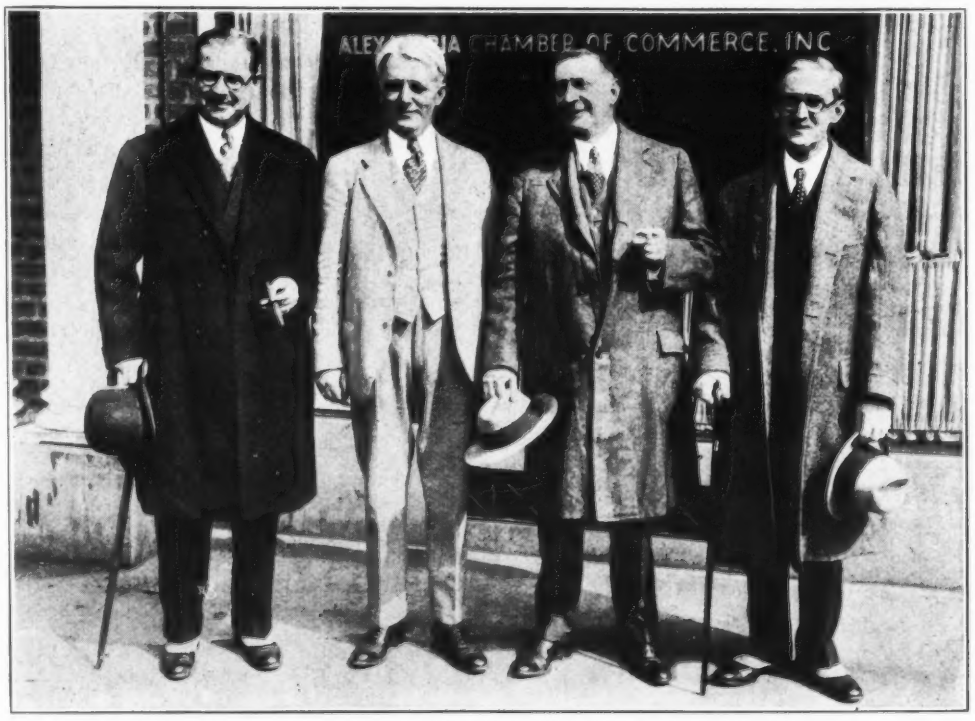
a) Where a community center is established, consisting of both a general community organization and smaller groups, a local community-center council may be organized consisting of representatives elected from the general community organization, the chairman of the executive committee, one representative from each smaller group, and the principal of the school. Each smaller group may elect an executive committee which shall cooperate with the principal and teacher or leader in charge, in promoting the welfare of the groups which it represents.

b) Where a community center is established, consisting of a number of groups, but with no general community organization, as above described, a local community-center council may be organized, composed of the chairman of each group, one additional representative for each group above the first twenty, and the principal of the school. Each group may elect an executive committee, which shall cooperate with the principal and teacher or leader in charge in promoting the welfare of the group which it represents.

c) Where a community center is established as a general community organization, with no smaller groups, the local community-center council may be composed of members elected at large, and the principal of the school, an ex officio member.

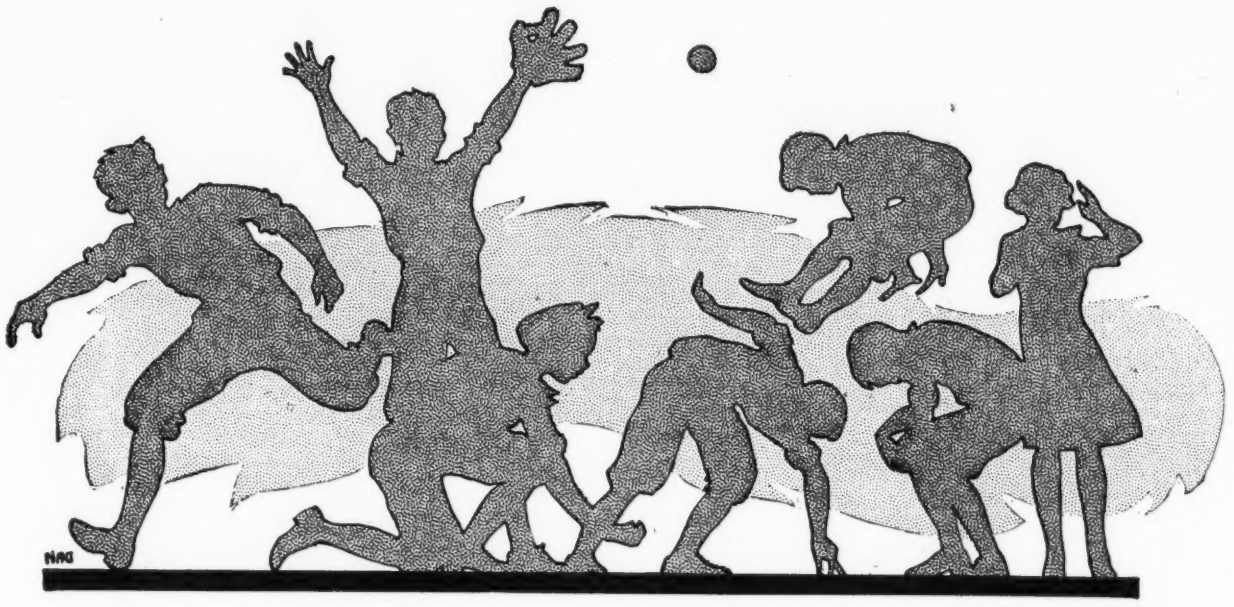
46. Any community center that is organized in accordance with one of the above described plans and submits its constitution to the board of education for

(Concluded on Page 108)



NEW YORK EDUCATORS PHOTOGRAPHED ON TOUR OF VIRGINIA

A large party of New York educators recently visited historic spots in Virginia in anticipation of a tour to be taken by school children in 1930. Left to right: Joseph Miller, secretary of board of education; Alfred M. Barrett, former public service commissioner of New York; Stuart G. Gibony, president Thomas Jefferson Memorial Foundation, and George J. Ryan, president of board of education. (Int. Newsreel, photo.)



BUBBLING over with energy; little votaries of action. . . . never still for a minute. Healthy, happy, care-free little girls and boys. . . . just normal youngsters. To hold them down is to break their spirits. . . . but we must direct the never ceasing action; guide the energy; build strong characters as well as strong bodies; keep them off the street, away from danger.

So each year there is a growing realization of the importance of the playground; and greater care in the selection of playground equipment. Safety, service, durability... Medart playground equipment, for many years, and the whole country over, is the equipment of first choice.

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MEDART

Manufacturers Since 1873

Makers of Gymnasium Apparatus, Playground Equipment, Steel Lockers, Steel Shelving, Steel Cabinets and the Junior Line for the Home Playground.

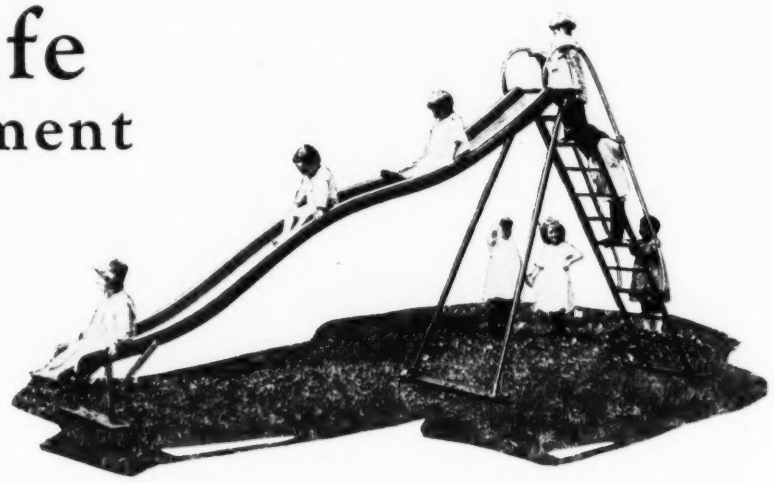
FRED MEDART MFG. CO., 3530 DeKalb St., St. Louis

Little Tots are Safe
with **FUN-FUL** Equipment

When the recess bell sounds and the scramble for playground apparatus starts, do little children think of danger? Do they stop to consider the possibility of injury, or do they place their faith in some one else's thinking?

There's real satisfaction in knowing that playground equipment is Hill-Standard's FUN-FUL—that it is the safest play apparatus made—that no matter whether it is used as it was intended to be used or whether it is subjected to unusual strain through the invention of some new use, no accident will *ever* happen because of failure of any part of the apparatus.

And FUN-FUL equipment is smoothest and easiest in operation as well. Almost 30 years devoted to the development and building of safe playground equipment has resulted in a positive leadership in design. Such exclusive features as the Hill-Standard, self-contained, double-race ball bearings and the improved swing stirrups are characteristic of this leadership.



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We will gladly send a catalog showing the greatest line of play equipment made — A catalog which explains advantages by showing the underlying details of improved design and construction.

Largest manufacturers of playground and swimming pool equipment.

DIVISION F

HILL-STANDARD CO.

EST. 1900

Anderson, Indiana, U.S.A.

(Concluded from Page 106)

approval, may be recognized as a regularly established community center, and be given the right to conduct its own affairs and make use of the school building it occupies, subject to the rules and policies established by the board of education. Such recognition shall be regarded as a general permit for all events, subject to the approval of the director of evening activities, carried on under the center's direction.

47. The director of evening activities may veto any action of a local community-center council which he may regard as contrary to the rules governing the conduct of community centers; provided, however, that the local community-center council may appeal to the superintendent of schools, and from his decision to the board of education, upon the veto of any action of the said director.

Membership and Attendance

48. The local council may establish rules governing membership, but membership of all residents of the local community shall be on equal terms. Membership of a person in any group establishes the membership of the person in the general organization.

49. In granting community-center privileges, preference shall be given to those over 16 years of age. The director, with the approval of the superintendent of schools, shall have authority to admit persons under that age.

50. As a general policy, the following schedule of membership and attendance shall prevail in classes and clubs having an instructor paid by the board of education or by the local center:

a) Evening and afternoon vocational classes in home economics, trade, and industry, or classes of this type which do not fall within the provisions of the Smith-Hughes law:

Organization:

1. A minimum enrollment of fifteen persons shall be necessary to form a class. In the case of classes in trade and industry, this enrollment must consist of persons in the given or related trade.

2. When the enrollment increases to thirty persons and the attendance passes twenty, a second teacher may be appointed. If this is done, the data of the attendance report shall be divided equally between the two teachers.

Discontinuance:

1. When the attendance in a class with one teacher falls below the minimum of ten for two consecutive sessions, the class shall be automatically discontinued. If the teacher believes that the attendance will return to the minimum he may continue the class on his own responsibility with the understanding that no salary shall be paid for succeeding evenings, unless the attendance is ten or more. However, it shall be definitely understood that not more than one such opportunity shall be given any teacher to restore the attendance to the required minimum.

2. When the attendance in a class with two teachers falls below the minimum of ten each for two consecutive sessions, the services of the second teacher shall be discontinued. The second teacher may continue on his own responsibility with the understanding that no salary shall be paid for succeeding evenings, unless the attendance is ten or more for each teacher. However, it shall be definitely understood that not more than one such opportunity shall be given any teacher to restore the attendance to the required minimum.

3. Where the classes are combined, the combined total enrollment shall show on the attendance report of the class remaining in operation.

b) Academic, commercial, Americanization, study, gymnasium, choral, orchestra, and boys' and girls' clubs:

Organization:

1. A minimum enrollment of twenty persons shall be necessary to form a class.

2. When the enrollment increases to forty persons and the attendance passes thirty, a second teacher may be appointed. If this is done, the data of the attendance report shall be divided equally between the two teachers.

Discontinuance:

1. When the attendance in a class with one teacher falls below the minimum of fifteen for two consecutive sessions, the class is automatically discontinued. If the teacher feels that the attendance will return to the minimum, he may continue the class on his own responsibility with the understanding that no salary shall be paid for succeeding evenings unless the attendance is fifteen or more. However, it shall be definitely understood that not more than one such opportunity shall be given any teacher.

2. When the attendance in a class with two teachers falls below the minimum of fifteen each for two consecutive sessions, the services of the second teacher shall be discontinued. The second teacher may continue on his own responsibility with the understanding that no salary shall be paid for these succeeding evenings unless the attendance is fifteen or more for each teacher. However, it shall be definitely understood that not more than one such opportunity shall be given any teacher.

Responsibility for Enforcement:

The enforcement of these rules shall rest with the pricipal, teacher, or leader in charge.

Whenever a class falls within any of the above regulations for automatic discontinuance, but the teacher believes that there are circumstances why the regulations should not be enforced, an immediate appeal must be made to the superintendent of schools for a decision.

51. The evening principal shall teach a class when the average weekly attendance falls below one hundred per evening in the building in his charge.

52. The evening principal of a building or the secretary of a community center shall be responsible for the care of the building while it is in his charge, and for the proper conduct of all activities in the said building, in accordance with the rules of the board of education, the orders of the superintendent of schools, and the director of evening activities. Where no evening principal has been appointed, or where there is no regularly organized center with a secretary, the day principal shall be held responsible for the care of the building and the general conduct of activities in the building in his charge.

53. The day principal shall cooperate with the local community-center council or community organization in such a way as to make the local community center a genuinely self-governing body within the limits established by the board of education. In order to bring this about he is to be an exofficio member of any regularly organized group or center.

Activities, Nature of; Pay of Instructors

54. Regularly organized community centers in cooperation with the director of evening activities, the recreational commission, and the local principal may establish and direct on a parial or on an entirely self-supporting basis, dramatic, literary, civic, science, gymnastic, dancing, and other clubs, choral and orchestra classes, vocational classes as sewing, millinery, embroidery, cooking, and recreational work such as quiet or active games. Under the same conditions the center may conduct entertainments and hold meetings to consider and promote questions of community welfare, and conduct such other activities of an educational, recreational, social, or civic value as are not prohibited by the board of education.

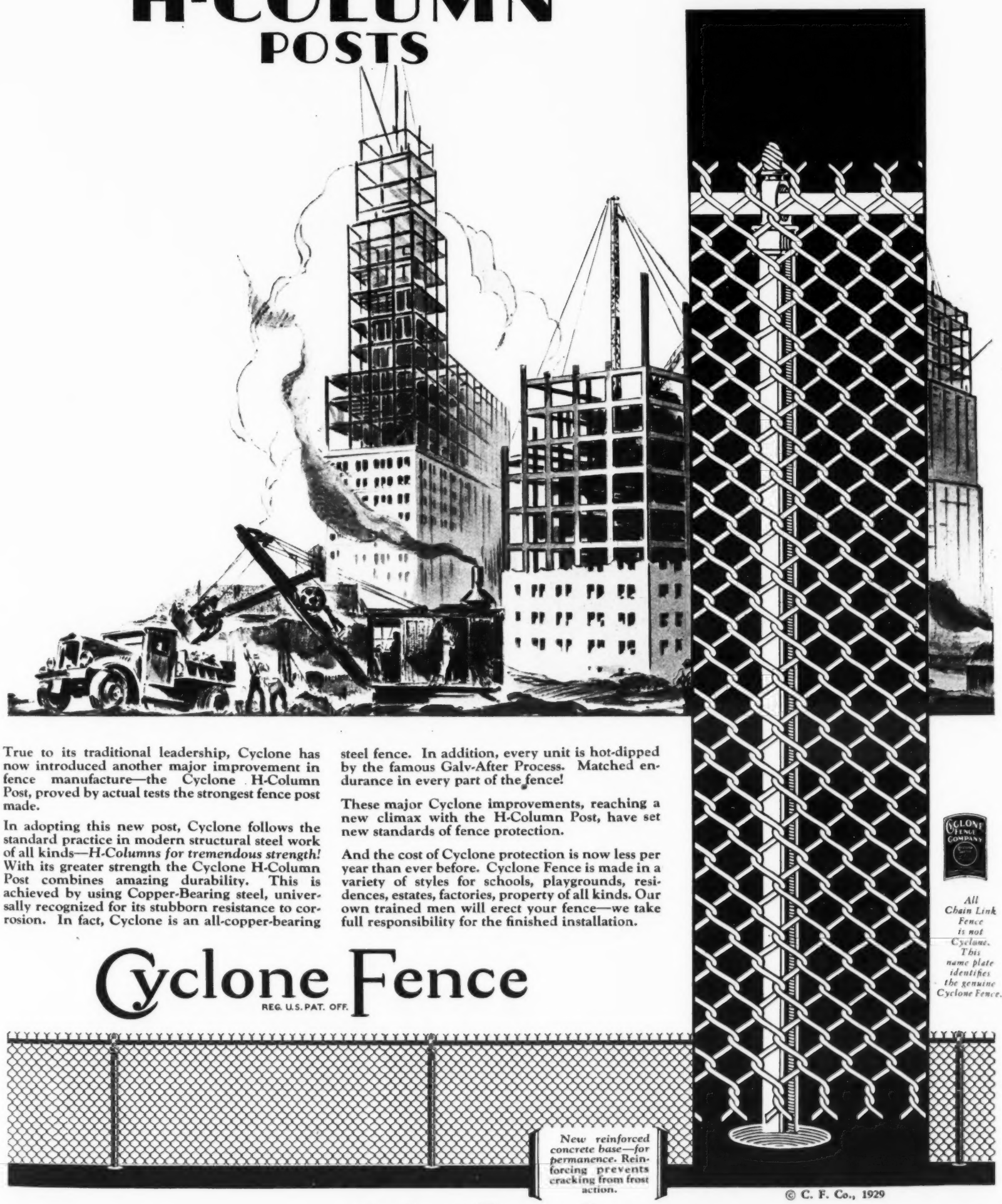
55. Dancing may be permitted as a feature of an evening's entertainment of a community center, a mothers' club, a parent-teacher association, or any school organization when conducted under the direction of a committee responsible to the principal of the school who shall be an exofficio member of the said committee. The said committee shall be responsible for the character and conduct of all those in attendance. Attendance shall be restricted to the members of the center, community, or group participating, and invited guests who meet with the approval of the committee in charge. Dancing classes or clubs may be formed under the immediate direction of any of the above organizations or groups. Membership in such classes or clubs shall be limited to the residents of the community or school. Any exception to this must be approved by the superintendent of schools.

56. In any clubs or classes of the community center or any other group making use of the school property, the members may elect their own instructor by a majority vote, but such instructors must meet with the approval of the superintendent of schools, and shall especially be subject to the conditions laid down in section 20 of these rules. Such instructors shall be paid at no greater rate than those instructors in the employ of the board of education. Any exception to this rule must be submitted to the superintendent of schools for his approval.

THE FUNDAMENTALS OF LIFE

We are giving too much time to teaching the incidentals of life and too little to teaching the fundamentals of life. As young people are given more material, political, and intellectual power they must have more spiritual power to correspond or civilization gets top-heavy and out of balance. The ultimate result is temporary collapse. Hence, the great need of the hour is not more or larger schools, colleges, and universities, but more sane religious education in those which we now have. —Roger Babson.

STRENGTH AND ENDURANCE
CYCLONE
H-COLUMN
POSTS



True to its traditional leadership, Cyclone has now introduced another major improvement in fence manufacture—the Cyclone H-Column Post, proved by actual tests the strongest fence post made.

In adopting this new post, Cyclone follows the standard practice in modern structural steel work of all kinds—*H-Columns for tremendous strength!* With its greater strength the Cyclone H-Column Post combines amazing durability. This is achieved by using Copper-Bearing steel, universally recognized for its stubborn resistance to corrosion. In fact, Cyclone is an all-copper-bearing steel fence. In addition, every unit is hot-dipped by the famous Galv-After Process. Matched endurance in every part of the fence!

These major Cyclone improvements, reaching a new climax with the H-Column Post, have set new standards of fence protection.

And the cost of Cyclone protection is now less per year than ever before. Cyclone Fence is made in a variety of styles for schools, playgrounds, residences, estates, factories, property of all kinds. Our own trained men will erect your fence—we take full responsibility for the finished installation.

Cyclone Fence
REG. U.S. PAT. OFF.

New reinforced concrete base—for permanence. Reinforcing prevents cracking from frost action.

All Chain Link Fence is not Cyclone. This name plate identifies the genuine Cyclone Fence.

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Gate receipts will finance school athletics

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PROPERLY coached, well-equipped athletic teams are a distinct asset to any school. Athletic events not only develop a spirited student body, but promote a closer understanding between the school and the citizens of a community.

A well-rounded program of athletics is within reach of every school. When the athletic field is enclosed by an Anchor Fence, gate receipts will more than cover coaches salaries, cost of uniforms and equipment.

A lasting Anchor athletic field enclosure can usually be provided from the income from a single football or baseball season. Ask the Anchor Fencing Specialist at the nearest of our 75 offices to submit a plan of enclosing your school athletic field. You can rely upon his advice.

ANCHOR POST FENCE COMPANY
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Albany; Boston; Charlotte; Chicago; Cincinnati; Cleveland; Detroit; Hartford; Houston; Los Angeles; Mineola, L. I.; Newark; New York; Philadelphia; Pittsburgh; St. Louis; San Francisco; Shreveport

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ANCHOR Fences

Let these washable window shades serve you for years to come

Quarton School, Birmingham, Michigan, Tontine-equipped.

IF you want to be rid of window shade replacement expenses for many seasons and, at the same time, have clean, attractive shades always—give du Pont Tontine washable window shades a chance to serve you.

Tontine gives you a combination of beauty and durability that is equalled by no other window shade material. You can keep Tontine window shades always fresh and spotless. An application of soap and water instantly removes all traces of dust and soil—restores all their original beauty. And these shades are built to last season after season.

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Please send me samples and full information about Tontine, the washable window shade.

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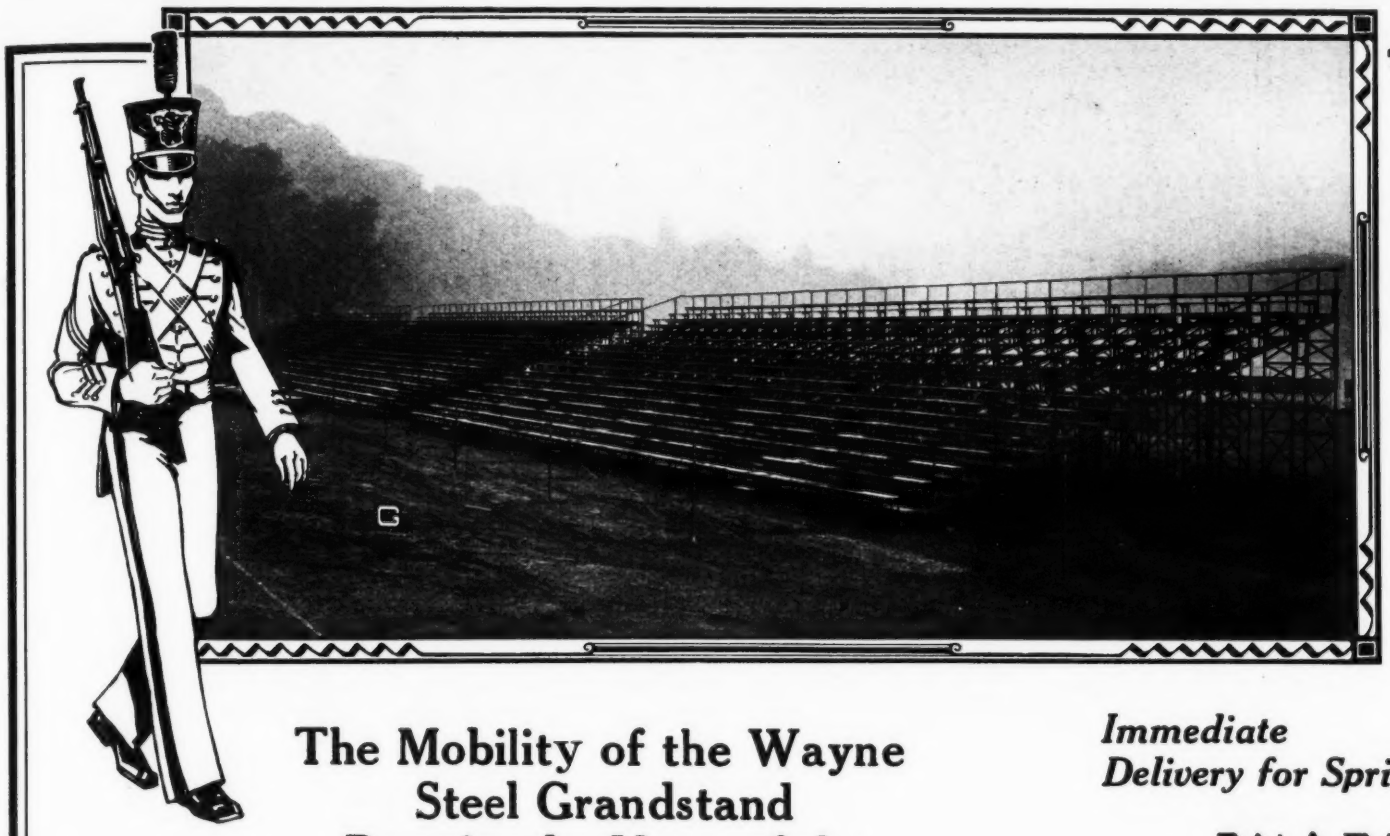

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You get the most in safe—practical service— For outdoors—indoors.

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School-Board News

THE FIFTY-SIXTH ANNUAL MEETING OF THE MICHIGAN ASSOCIATION OF SCHOOL SUPERINTENDENTS AND SCHOOL-BOARD MEMBERS

By H. C. Daley

The fifty-sixth annual meeting of the Michigan Association of School Superintendents and School-Board Members was held at the Olds Hotel, Lansing, Mich., on Thursday and Friday, March 28 and 29.

After brief remarks by Pres. C. W. Crandell of Monroe, Supt. M. R. Keyworth of Hamtramck, gave an illustrated address on "The Internal Functional Organization of a School System." Supt. H. C. Spitler of Petoskey, discussed the topic, "The School Budget: Its Formulation, Presentation, and Administration," John Lee of the State Department of Public Instruction presented, "The Superintendent as a State Officer."

The afternoon session closed with a discussion of "The Value and Technique of the Report of the Superintendent to the Board of Education." Supt. B. H. VandenBelt of Marshall, presented the phase termed "The Continuing Report," and Supt. L. A. Butler of Grand Rapids, discussed the subject from the angle of the annual report.

At 6:30 p.m. the banquet room of the Hotel Olds was well filled with members and guests. Supt. Frank Cody of Detroit, president of the Department of Superintendence of the National Education Association, effectively performed the duties of toastmaster by introducing in a rapid-fire, humorous, and appreciative way, the guests of the occasion including the Hon. Webster H. Pearce, supt. of public instruction, and Dean J. B. Edmonson, head of the University of Michigan School of Education. The principal address of the evening was given by Cameron Beck, personnel director of the New York Stock Exchange.

The Friday morning session was opened by Prof. Farwell. Dean Warren Bow of the Detroit Teachers' College, spoke on the subject of "The Need for Better Trained Teachers," and Supt. F. W. Frostic of Wyandotte, took the subject of "The Financial Report." He discussed the futility of comparing raw tax rates, and illustrated his meaning by a comparison of the budget of his home schools with that of the schools of Fordson. Assistant Superintendent Philip Lovejoy of Hamtramck, presented a discussion of the school budgets of Hamtramck and Highland Park, basing his comparisons on a joint study initiated by Supt. I. M. Allen of the latter city. President Crandell announced that the committee which had prepared these reports would be continued another year.

Col. James A. Moss presented an account of the work of the United States Flag Association in connection with its annual flag project.

The nominating committee consisting of Supt. C. V. Courter of Flint, Mrs. Emmy Keller, board member of Hastings, and Mr. Spencer Kelly, board member of Lansing, recommended the following officers for the ensuing year:

President—R. J. Coryell, president of the board of education, Birmingham; vice-president—Supt. Frank P. Buck, St. Johns; secretary—Assistant Superintendent H. C. Daley, Highland Park.

Supt. J. W. Sexton of Lansing, president of the Michigan Education Association, introduced Dr. George E. Raiguel, Specialist in World Events, who gave an interesting and thought-provoking address on the subject of "The United States and World Affairs."

The session closed with the unanimous adoption of resolutions which in part read as follows:

I. The members of your committee realize that it is not the function of this department to initiate new educational policies for the Association and, accordingly, will confine this report to appreciatory resolutions and to recommendations to the representative assembly and the board of directors of the Association.

II. We reaffirm our belief in the following items that have already been made a part of the program of the Michigan Education Association:

1. A sound retirement system
2. County-unit system
3. Equalization of the costs of education by state aid and enlargement of the taxing unit

III. We recommend the following to the board of directors:

1. A study of methods for greater economy in school expenditures, having as its object not a limitation of opportunity to the children of the state, but the elimination of such things as duplication of education effort and unscientific budget making.
2. A study of the entrance requirements of the teacher-training institutions of the state, keeping in mind the vocational units in the high-school curriculum and their value to prospective vocational teachers.

IV. This department has known and appreciated the services to the cause of education in the state of Michigan of former dean A. S. Whitney of the School of Education of the University of Michigan, and extends to him its best wishes for a continued long and happy life.

V. To Dean J. B. Edmonson of the School of Education of the University of Michigan we pledge our support and wish for him a long and successful administration.

VI. We commend the very efficient leadership of State Superintendent Webster H. Pearce and his department and pledge our continued support to the program outlined by them.

AMONG BOARDS OF EDUCATION

—Wetumka, Okla. Board members from two city wards and from the outlying territory will be elected at the spring election. To date, no one is opposing the present members, who have announced their candidacy for reelection.

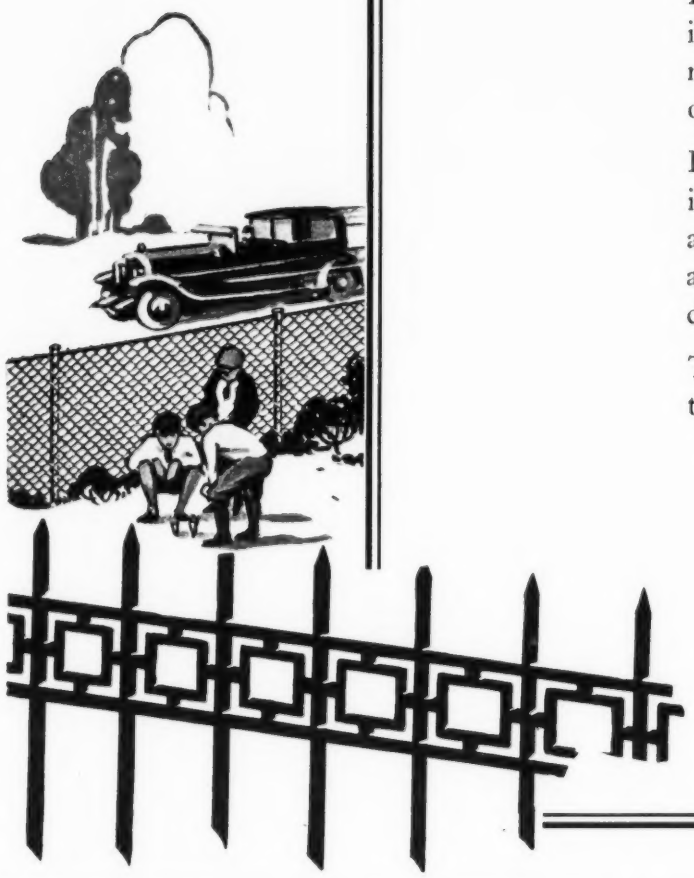
—Akron, Ohio. The school board has requested Supt. T. W. Gosling to take up with the safety engineer and the police department the matter of the sale of objectionable magazines to school children. Complaints had been made by teachers and parents that objectionable magazines were being sold to pupils in the schools.

—Newberg, Oreg. The school board has adopted a set of rules governing the organization and duties of the board and the functions of the superintendent. The rules have been patterned after those in use in Clarksdale, Miss., and have been modified to suit the local conditions.

—Arcadia, Calif. The board of trustees recently appointed a day and invited the school patrons to enter their complaints about school matters or against any teachers. Recently, some complaints have come to the board members about school matters and it was felt that these should be considered and adjusted in a special meeting.

—Opposition to the Mastick bills affecting educational problems, and now pending in the New York state legislature has been made by W. A. Clifford, executive secretary of the Association of School Boards and Trustees of New York state.

The Mastick bills seek to give the mayors of cities in New York state ex-officio status on school boards, when financial matters are under discus-



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There's a new Stewart School Fence Catalog you will want to consult. We will send you a copy of it, gladly.

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sion; removal of school libraries, and consolidation of public library branches; and the prosecution of school-board members for illegal acts in connection with their work.

—Insurgent members of the school board at Providence, R. I., have attacked the present method of appointing teachers. Mr. G. J. West, and Dr. George E. Reynolds, two of the members, have termed the rating of teachers as stupid, and have urged that individual records of teachers be kept. Supt. Isaac Winslow, in explanation, said that under the present system, the superintendent and his assistants, and the supervisors discuss and vote upon the classification of teachers. The supervisors, he said, were most familiar with the abilities of the individual teachers.

—Fairfax, Va. The school board of Fairfax county has taken steps toward the consolidation and reorganization of the program for the county high-school system with a view of an improvement in organization and a saving in the cost of instruction. Under the plan, all first-year instruction will be offered at Fairfax, with the class operating in two sections under separate teachers. Second, third, and fourth-year instruction will be given at Oakton. High-school departments in two districts have been eliminated entirely.

A special study of the cost of operation, conducted by the clerk of the board, showed both the present cost of operating three high schools, and the cost of operation under the consolidated plan. From the information at hand, it is estimated that the saving in cost of operation would reach $3,000 per year, as compared with $6,450, the cost for the past year. Under the new plan, 7 high-school teachers will take care of 150 pupils, in place of the 11 formerly employed.

—Fitchburg, Mass. Upon the suggestion of Principal J. A. Chalmers of the high school, the school board has given permission for the employment of an emergency teacher next year, who will perform substitute work in the high school and will also give special attention to retarded or backward students. It is estimated that a considerable saving in substitute pay will be effected by having the emergency teacher fill in during the brief absences of regular teachers.

—New Britain, Conn. At the suggestion of Supt. S. H. Holmes, the school board has authorized the superintendent to take up with the state education department measures for the correction of the present situation in the issuance of working certificates to children of 14 to 16 years of age.

It appears that, under the laws as they are now carried out, a student who has not completed 150 days of continuous schooling cannot receive a working certificate. The law also provides that a child who has passed the sixth grade and is between 14 and 16 years of age can obtain a certificate, but he must have attended 150 days. Under the law, students are forced to attend high school when their parents do not desire it, and when family circumstances are such that they should not be compelled to do so. Again, students may be compelled to attend the full 150 days, even though they have passed beyond the seventh grade and have reached the age of 14.

—Pawtucket, R. I. The school board has voted to assume the supervision of the high-school fraternities and similar organizations in an effort to foster a school spirit, and to eliminate the petty rivalries and jealousies which have prevailed in the past.

The board has adopted a rule which provides that no pupil may join any organization in the junior or senior high schools unless the same has been approved by the state commissioner of education, under penalty of being barred from participation in athletic or literary contests or holding class office.

Students who hold membership in fraternities or secret societies before the passage of the rule are exempt from the ruling unless they use their influence to the detriment of the best interests of the school. This exemption is qualified by a provision that the organizations must place on file with the superintendent, an affidavit of their membership list of March 12.

If at any time the school board decides that a pupil's membership in any organization is detrimental to the best interests of the school, the regulation becomes effective for such pupil. If a question arises whether a pupil is a member of an organization not approved by the schools, he may be required to make an affidavit that he is not a member of such an organization.

—New York, N. Y. The board of education has adopted an amendment to its by-laws, providing that one-twenty-fifth of a month's salary will be deducted for each day of absence on the part of every member of the teaching and supervisory staff for whom hours and duration of service are prescribed. The aggregate deduction in any one month may not exceed the salary for that month.

The amendment also provides that proportionate deductions of one-twenty-fifth of a month's salary will be made for absence of less than one day on the following basis: where the normal hours of service are from five hours and thirty minutes to six hours and thirty minutes in one day, proportionate deductions shall be made on the basis of six hours to the day; where the normal hours of service are in excess of six hours and thirty minutes, proportionate deductions will be made on the basis of seven hours to the day.

—Council Bluffs, Iowa. The school board has ruled that students in the high school who marry must withdraw from classes. The board's action is the result of an case in the local high school.

—Chambersburg, Pa. Because the school laws do not recognize influenza as a communicable disease, the local school board recently refused to pay the teachers for the days the schools were not in session, from January 2 to 11, because of an epidemic. It was pointed out that the board lacked the authority to pay the salaries under the clause in their contracts concerning contagious diseases.

—Norfolk, Va. The school board has reorganized, with provision for two meetings each month and for changes in the method of selecting teachers. The board has discontinued the committee system and will hereafter act directly upon all matters presented.

Under the arrangement, all matters of business will originate with the board as a whole rather than with the two major committees—the teachers and textbook committee and the building and property committee. The committees have been renamed to care for matters the board may delegate to them.

—Buffalo, N. Y. The school board has adopted a rule, which is intended to prevent commercialization of school lectures and entertainments. Under the rule, principals of schools must obtain permission from the superintendent before holding entertainments at which admission fees are charged.

—Pontiac, Mich. Beginning next September, all high-school students will be required to make a $2 book deposit. The action is intended to take the responsibility of the books from the teachers and place it directly on the students.

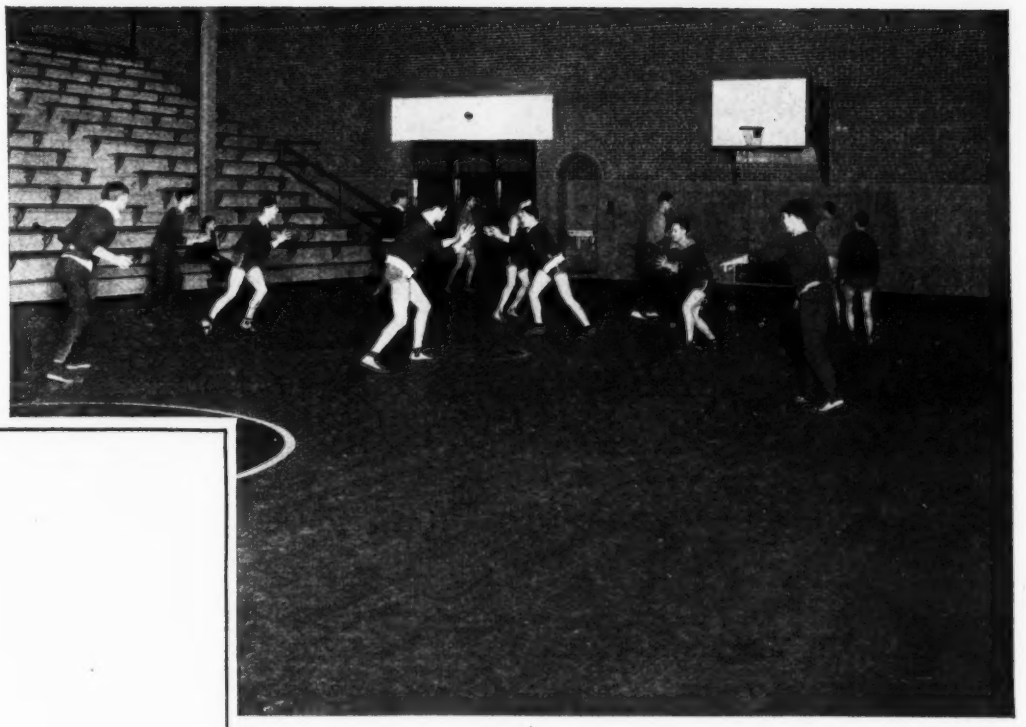
—The governor of Massachusetts has signed a bill, eliminating the Haverhill Stadium Commission, and giving the control of athletics to the local

(Concluded on Page 114)

"our BLOX-ON-END Gymnasium Flooring

exceeds the most extravagant claims made for it"

Supt. J. W. Ramsey.



Board of Education
OFFICE OF THE SUPERINTENDENT
Fort Smith, Arkansas

March 21, 1929.

Carter Bloxonend Flooring Co.,
902 Walnut Street,
Kansas City, Missouri.

Gentlemen:

Our Bloxonend Gymnasium Flooring exceeds the most extravagant claims made for it. Our coach and students, as well as visiting coaches and players, who have been on the floor this year, are loud in their praise of it. It is as noiseless as a cork floor, almost as elastic as a rubber floor and yet it has the firmness of a concrete floor.

We are proud of our new building in every way, but there is no part of it to which we point with greater pride than the gymnasium floor.

The initial installation expense of Bloxonend Flooring is somewhat greater than an ordinary floor, but unquestionably it is the most economical and satisfactory floor for a gymnasium. Please put us on record as unqualifiedly endorsing Bloxonend. We would not be satisfied with any other kind.

Sincerely yours,

J. W. Ramsey,
Superintendent.

THE Fort Smith Senior High School—one of the finest in the South—was designed by Perkins, Chatten & Hammond, Chicago, prominent school architects. Bassham & Wheeler, Fort Smith, were supervising architects.

BLOXONEND is a complete departure from the old fashioned type of wood flooring. Introduced into school service (Gym and Shop) less than ten years ago, it has by sheer merit gained the endorsement of prominent educators and is specified by nearly all leading school architects.

The hazard of splinters—ever present when ordinary flooring is used—is eliminated by BLOXONEND because the tough end-grain forms the wearing surface. This surface (2½ in. thick) is firm and fast, yet affords cushion-like resiliency. It is handsome, noiseless, lasts a lifetime and provides satisfactory anchorage for apparatus and machines.

Our booklet "A Modern Wood Floor That Can't Splinter" will interest you. Write for your copy.

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Bloxonend is made of Southern Pine with the tough end grain up. It comes in 8 ft. lengths with the blocks dovetailed endwise onto baseboards

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Stealing Stopped!

Not by Discipline . . . . .
But by PREVENTION!

There is a temptation about unlocked doors and pretty clothes and nick nacks that children in the formative period of their lives haven't learned to resist. It is the ease of taking and "getting away with it" that appeals to the little boy or girl who does petty pilfering. Children don't stop to think of the right or wrong of what they are doing.

Now is when you must help them to think . . . and help them to form the habits which will mean honest young manhood and young womanhood. With a Miller School Wardrobe, you teach them proper concepts in regard to other children's property. The children recognize the precautions you have taken to protect property rights.

Install Miller Wardrobes and stop school room thievery!

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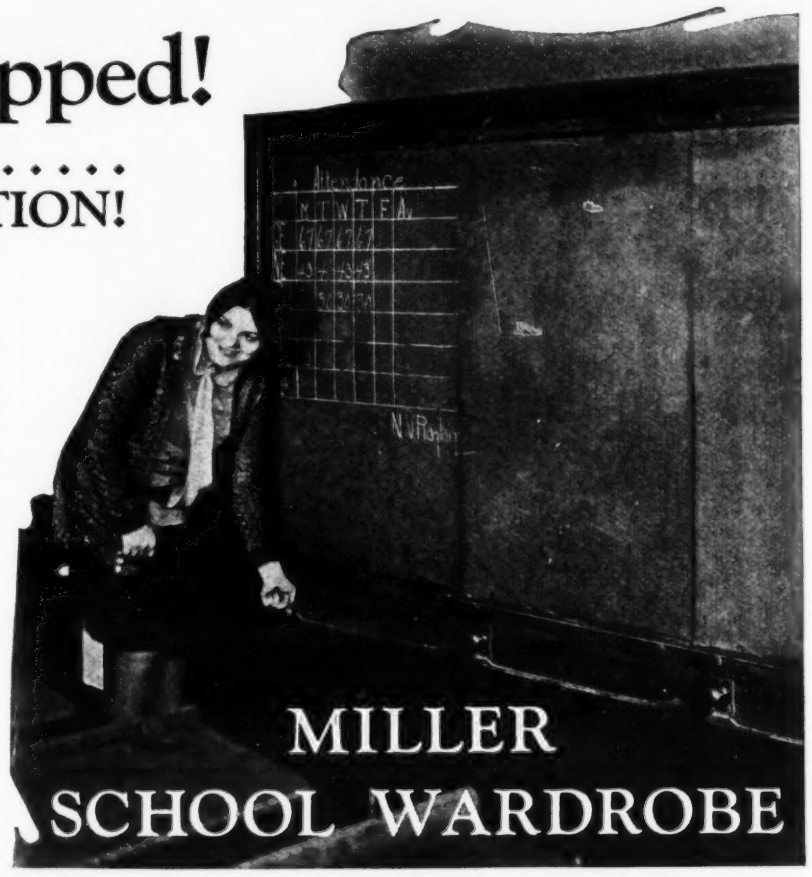


(Concluded from Page 112)

school board of Haverhill. Under the new plan, the board will have the power to rent or lease the stadium to private parties. The bill also gives the school board the right to charge admission to athletic contests. The mayor may include an appropriation for athletics in his budget, with all receipts paid into the city treasury.

—Chattanooga, Tenn. The teachers of the city schools have presented a petition, opposing the adoption of the plan of Dr. George D. Strayer providing for the consolidation of the county and city schools. Dr. Strayer, in a report submitted several months ago, recommended that the county and city schools be consolidated, under the direction of a county board of seven persons, each to be elected, and to serve without salary. The teachers have opposed the idea of being placed under a county board.

Under the Strayer program, the board of education would employ an executive secretary, with ample educational and administrative qualifications, to have direct charge of the department of education. The plan seeks to divorce the schools entirely from the control of the city commission or the county court.

—A board of education, under the Michigan school laws, has no authority to make a loan to the city, according to an opinion given by a local law firm in Grand Rapids. Under the law, school funds may not be transferred but must be used for strictly school purposes.

—The board of building and safety commissioners and the fire department of Los Angeles, Calif., recently addressed a communication to the board of education relative to the loss of life and property resulting from the improper use of gas appliances. It is planned that a circular of information shall be prepared for use in the classrooms in connection with an educational campaign to eliminate accidents of this nature.

The fire department has given the board of education the following suggestions for principals and teachers to call to the attention of pupils:

1. The gas now being used is natural gas brought in from the oil fields, and is odorless. Its presence cannot be detected by the sense of smell.
2. All gas appliances should be inspected and regulated by an experienced person.
3. The use of flexible connections for appliances should be discouraged and permanent connections made where possible.
4. Proper ventilation should be provided for all gas appliances at all times.
5. Keep the telephone numbers of the emergency departments available at all times; better still, memorize them, in order to be able to call the proper authorities in time of emergency.

—Providence, R. I. The school board has revised its by-laws governing the appointment of the secretary and the superintendent of schools. The rules read:

The committee will elect a secretary who will hold office at the pleasure of the committee. The election or removal of a secretary will require the voters of a majority of the members.

The committee will elect a superintendent of schools who, upon his election, will sign a contract approved by the school committee. The election or removal of a superintendent will require the votes of a majority of the members of the committee.

—St. Louis, Mo. The school board has revised its rules governing janitors and matrons.

Under the rules, the salary of janitors and matrons will be deducted pro rata for absence, except in cases of sickness, when half pay shall be allowed, and said half pay shall not extend for a longer period than four weeks.

In cases where janitors or matrons may be absent because of accidental injury suffered in the discharge of their duties, the salary may be allowed above the limits as to time and amount, upon the recommendation of the commissioner of school buildings, and with the approval of the committee on school buildings.

Allowance for salary in whole or in part for absence, for other reasons than previously indicated in the section, may be granted upon the recommendation of the commissioner of school buildings, and with the approval of the committee on school buildings.

AN ILLINOIS SCHOOL DISASTER

The ruins of a frame school building at Maunie, Ill., after the tornado which swept the town. Two children were killed in the collapse of the building and one of the teachers suffered a broken arm.
(Int. Newsreel Photo.)

SOMETHING NEW ABOUT LIGHT

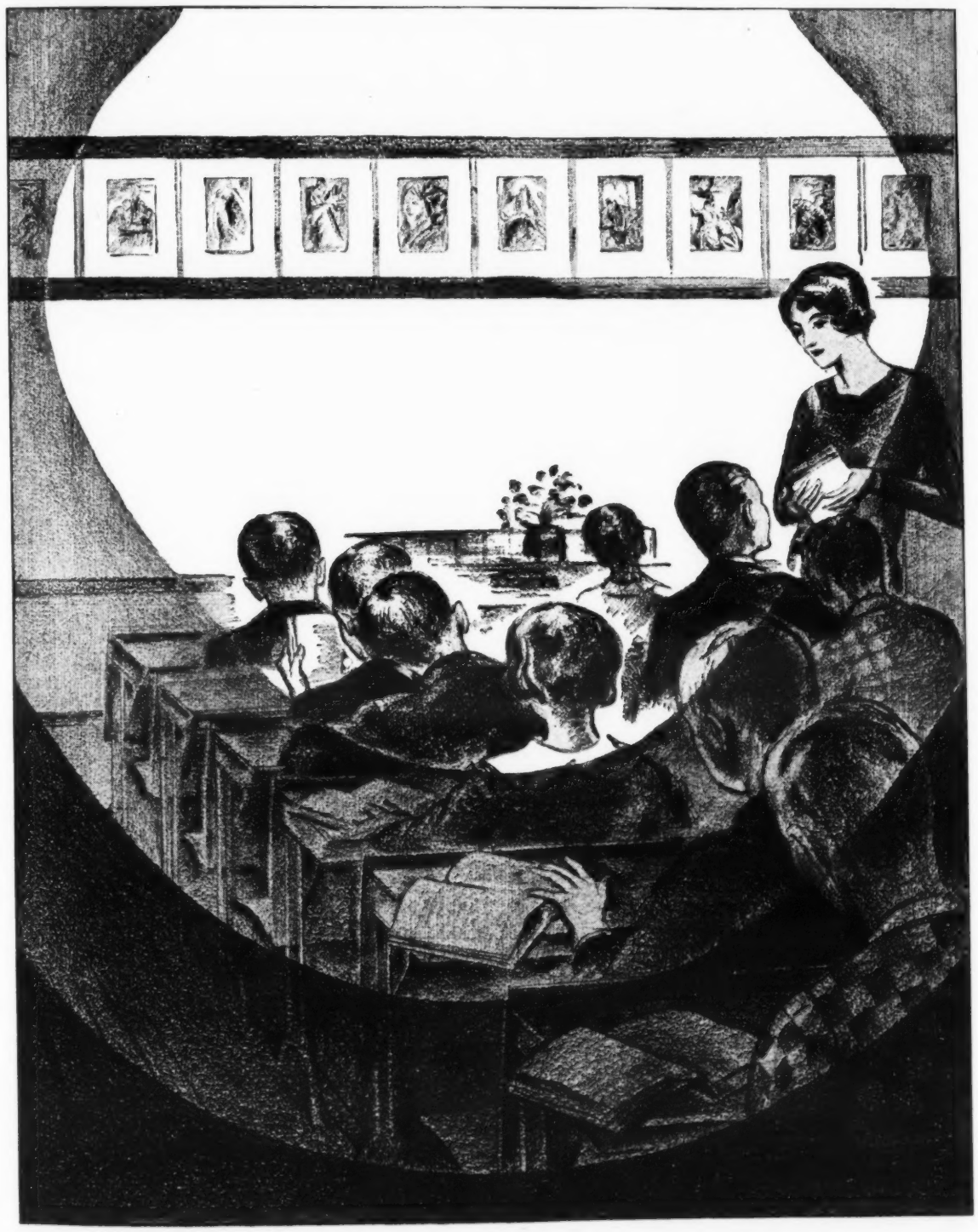
illustrating the connection between eyesight and

BALANCED LIGHTING

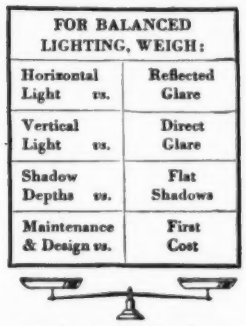
THE old idea of regarding light as something vague and indefinite cost too much in eye-strain and in nervous energy.

School executives are now recognizing the fact that light can be considered as a very definite, accurately controllable quantity. That an *exact picture* of the distribution of light from a lighting fixture can be obtained. That the intensity of illumination can be determined in advance. That a fixture may be selected to balance the factors of lighting against its requirements. In a word, that Balanced Lighting can be scientifically obtained.

Balanced Lighting is the idea on which the Graybar Lighting Line is based. It is the key to the selection of just the right fixture for a given purpose.



Graybar Lighting engineers offer here in compact, comprehensive fashion a simple basis for weighing a fixture. There are eight points involved.


FOR BALANCED LIGHTING, WEIGH:
Horizontal Light vs. Reflected Glare
Vertical Light vs. Direct Glare
Shadow Depths vs. Flat Shadows
Maintenance & Design vs. First Cost

Showing how various factors balance, for best results

No one fixture will check up perfectly on all eight points. No one fixture could or should, since an advantage in one point is generally offset by some other point. But the Graybar Line is so vast that it is sure to provide the specific fixture to meet the specific need .....

A little thought on lighting is well worth a few moments of any school executive's time. Why not fill in the coupon below?

OFFICES IN 72 PRINCIPAL CITIES

The Shelcrest, a Bakelite fixture. The leader in the Graybar Line. But only one of a great many Graybar fixtures.

Graybar Electric Co., Room 1501, Graybar Bldg. 420 Lexington Avenue, New York. *Gentlemen:*
We are interested in knowing more about BALANCED LIGHTING.

Name.....

Address.....

A.S.B. 2

GraybaR QUALITY LIGHTING

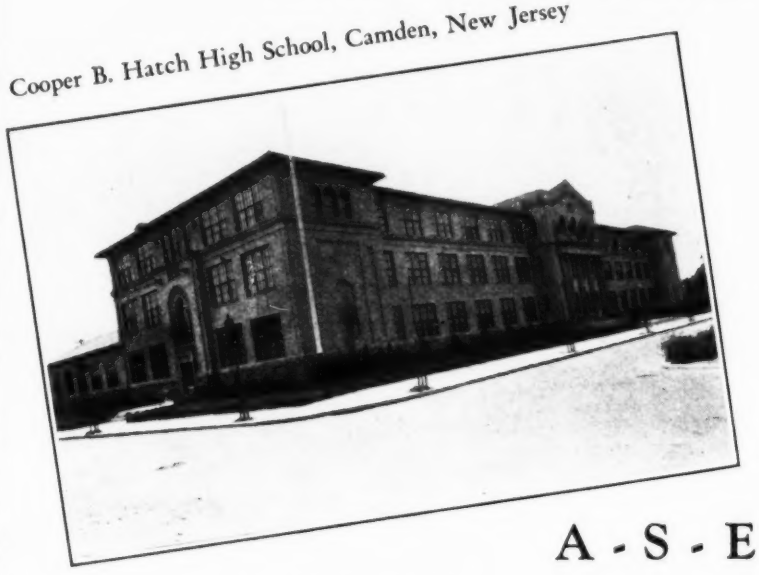
GraybaR

Successor to *Western Electric* Supply Dept.

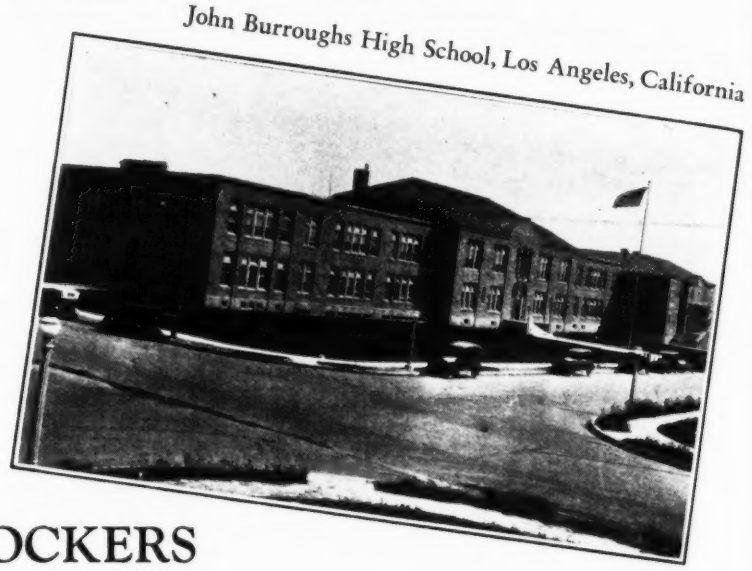
BALANCED LIGHTING

In The Finest Schools — From Coast To Coast

Cooper B. Hatch High School, Camden, New Jersey



John Burroughs High School, Los Angeles, California



A - S - E LOCKERS

Are In Daily Use

A-S-E installations fifteen years old remain solid and true—with every door perfectly aligned. Only masterful construction can produce such a record. A-S-E installation relieves you of further attention to lockers.

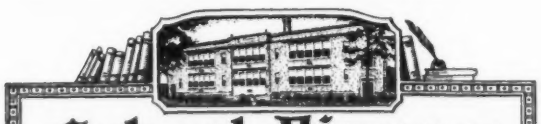
Are Being Specified Daily

Splendid service through fifteen long, hard years has persuaded many boards to specify A-S-E built lockers for additional equipment — Live testimonial to the superiority of A-S-E lockers. Stability under tests and superior installations cause A-S-E lockers to be specified.

Write for Descriptive School Locker Catalog, C 25.

All-Steel-Equip Company

Main Office and Factory—200 John St.
AURORA, ILLINOIS



School Finance and Building

IMPORTANT SCHOOL-BOND SALES
During the Month of March, 1929

Alabama—Birmingham, Public School Buildings	$1,000,000
Arizona—Maricopa Co., School District No. 1	270,000
California—Los Angeles Co., Glendale City School District	400,000
Florida—Leon Co., Special Tax School District No. 1	250,000
Michigan—Lincoln Park, School District	460,000
Minnesota—St. Cloud, School District	330,000
Mississippi—Clarksdale, School	250,000
New Jersey—Bloomfield, School Fund, Municipal Building	1,134,000
New Jersey—Newark, School	998,000
New Jersey—Westfield, School District	350,000
New Jersey—Weehawken Twp., School	681,000
New York—Lockport, School	500,000
New York—Oyster Bay and Babylon, Joint Union Free School District No. 22	350,000
New York—Pelham, Union Free School District No. 1	575,000
New York—Rochester, School Revenue 1928	290,000
Rhode Island—Cranston, School	275,000
Pennsylvania—York, School District	850,000
Wisconsin—Janesville, School	375,000

NEW YORK CITY ADOPTS NEW TYPE STANDARD SCHOOL BUILDING

Erection of the first new standard O type of small elementary school building, recently developed by Superintendent of Buildings W. C. Martin, has been recommended to the board of superintendents. The new structure will be a three-story flexible type building, suitable for the outlying sections of the city where the rapid growth of the school population may be easily met by the erection of wings to the main building. The O type building is built in the form of a U, with the first section on the corner of the plat and the wings extending on the two side streets.

The first building will be a twelve-room section of the O type, to be known as Public School 87, the Bronx. It will be organized as a kindergarten to 6B school for boys and girls and the plans call for eleven classrooms, in addition to an assembly hall, a kindergarten, and rooms for special subjects.

BUILDING NEWS

—Prophetstown, Ill. Construction work has begun on a new school, to cost $100,000.

—Yale, Mich. The voters of Brockway township have approved a school-bond issue of $85,000 for a new high school.

—East Hampton, N. Y. The Springs District residents have voted to raise $45,000 for a new school to replace one destroyed by fire.

—Schenectady, N. Y. The city and school authorities have entered into an agreement, which provides that the proposed new high school will be erected at a cost of slightly more than $1,000,000. The original cost of the building was set at $1,250,000.

—Shakopee, Minn. The citizens recently carried a school-bond issue of $70,000 for the erection of a high-school addition and a gymnasium.

—Janesville, Wis. The school board has received the plans for the proposed new buildings and additions to be erected under the new building program which is to cost $375,000.

—The citizens of Dryden, Mich., have voted to build an addition to the present school, at a cost of $50,000. The addition will contain an auditorium-gymnasium and classrooms for the kindergarten and lower grades.

—Newport, R. I. The school board has voted to appoint a committee of five to make a survey of the school buildings and to prepare a report of its findings. An appropriation of $200 was made for the use of the committee in carrying on its work. It is expected that the findings of the survey will be used in making plans for improvements to the school plant.

—Springfield, Mass. Upon the suggestion of Mr. C. T. Neal, a member, the school board has voted to obtain an opinion from the city solicitor on the matter of which branch of the city government has authority for the selection of sites for school buildings, and the purchase of sites, without the approval of the school board.

—Downing, Mo. The voters at a recent election, approved a school-bond issue for a new school building.

—Grinnell, Kans. The voters recently carried a bond issue of $65,000 for a new high-school building.

—St. James, Minn. The citizens have approved a bond issue in the amount of $80,000 for a new school.

—California, Mo. By a vote of five to one, the citizens have approved a bond issue of $90,000 for a school-building program, to include a grade school, an auditorium, a gymnasium, and a building for colored students. The proposition was carried with a vote of 750 for, and 146 against the bond issue.

—Shakopee, Minn. By an overwhelming vote, the citizens recently carried a school-bond issue for the erection of a new school. The building will be completed in time for the opening of the schools in September.

—St. James, Minn. The citizens recently voted a school-bond issue of $80,000 for the erection of a new school. The board plans a building to cost $105,000, which is to be financed by means of a sinking fund, together with a bond issue.

—Springfield, Mo. With a vote of five to one, the citizens recently approved a school-bond issue in the amount of $1,500,000 for an extensive school-building program.

—Lockney, Tex. By a vote of five to one, the voters recently approved a school-bond issue of $115,000 for the erection of a new school.

—Red Bluff, Calif. By a majority of nine votes, the citizens recently approved a school-bond issue of $100,000 for school-building purposes. Mr. W. H. Weeks of San Francisco, has been selected to prepare plans for the new building.

—The new union high school at Tolleson, Ariz., was occupied on March 8. The building contains an auditorium, a study hall, a library, a board room, and a number of special rooms and classrooms, and was erected at a cost of $64,000. It was planned and erected under the supervision of Messrs. Lescher & Mahoney, architects, of Phoenix, Ariz.

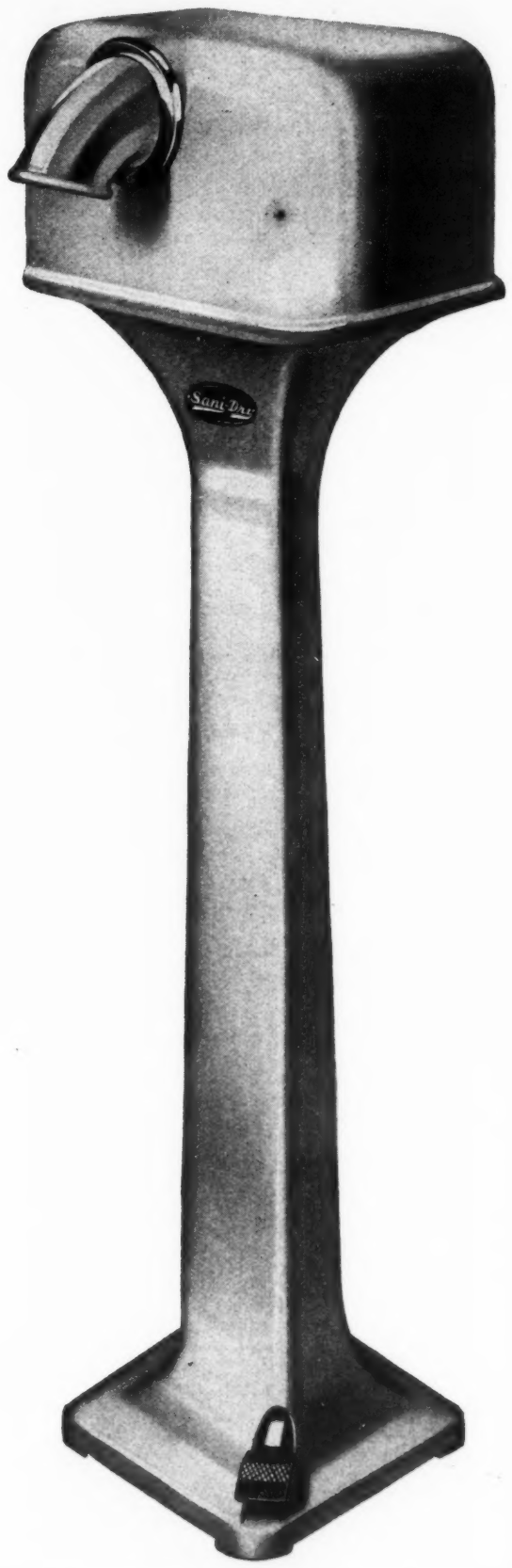
(Continued on Page 118)

Wherever Children Gather, Modern Sanitation is Necessary

the new "SF"

Sani-Dri

"Dries Quicker Than A Towel"



OUR LATEST MODEL, WITH ITS 12 OUTSTANDING IMPROVEMENTS ADVANCES SCHOOL SANITATION TO A NEW, HIGHER PLANE

Sani-Dri eliminates the muss, fuss and litter of old, unsightly towels FOREVER. It dries the natural way, by evaporation. Once installed, it operates continuously, reduces janitor attention and completely avoids those "no towel" periods when school appropriations are delayed or season's needs underestimated. Sani-Dri provides an "always there" service. This new model brings twelve improvements that are real advantages in the school. Faster, quieter, more efficient. Strongly built, too, with a mischief-proof construction of cast-iron, covered with genuine, long-life porcelain enamel. There is nothing for the curious to "play with" or injure. You'll want all the new details—send for the new booklet; no obligation.

Electrical Division, Dept. 5-A
CHICAGO HARDWARE FOUNDRY CO.
North Chicago, Illinois.

New Booklet Describes the "SF" Sani-Dri and its 12 Improvements

CHICAGO HARDWARE FOUNDRY CO.,
Electrical Division, Dept. 5-A,
North Chicago, Illinois.

I'd like to read the new booklet describing the "SF" Sani-Dri and its 12 new improvements. Without obligation, please send to

Name.....

Title.....

Address.....

City..... State.....

A Typical Installation of UHL Equipment in the Dover High School, Dover Center, Ohio

Lifetime Durability Splendid Appearance and Greatest Economy

UHL STEEL Cafeteria Equipment

STURDINESS is an essential quality in cafeteria equipment—and in the UHL Line you will find this quality an outstanding feature. Cold rolled steel forms the legs and frames of both tables and chairs, and when welded and braced the UHL way, this construction defies the hardest of school service.

UHL STEEL Tables and Chairs have every requisite for comfort, cleanliness and strength. Table tops are furnished in solid oak or birch with frame work in a choice of enamel colors. Chairs, in colors to match, are roomy and comfortable without taking up much space. Beauty and utility are combined and costly replacement every few years is avoided, when you choose this UHL Furniture.

It Pays to Buy This Better Furniture—Mail Coupon

Many schools have standardized on UHL equipment in their cafeterias, and have expressed their thorough satisfaction with its durability, appearance and economy. While its first cost may be slightly higher than ordinary wood furniture, it costs less in the long run because it will outlast it many times over.

Mail the coupon for the UHL catalog describing this equipment and other UHL school furniture.

THE TOLEDO METAL FURNITURE CO.
2099 Hastings St. **Toledo, Ohio**

The Toledo Metal Furniture Company
2099 Hastings St., Toledo, Ohio.

Send your catalog of Cafeteria Furniture and other products for school use.

Name.....

Address.....

(Continued from Page 116)

—Burlington, Iowa. By a majority of 881, the citizens voted to spend $600,000 for the erection of new school buildings during the next three years. A proposition for the erection of a gymnasium was defeated at the same election.

—Davenport, Iowa. The citizens have approved a bond issue of $15,000 for the erection of a gymnasium.

—Gladbrook, Iowa. The voters have approved a bond issue of $40,000 for an additional unit at the high school.

—Guthrie Center, Iowa. A bond issue in the amount of $80,000 has been voted for the erection of a new high school.

—Anderson, Mo. Bonds in the amount of $47,000 have been voted for a new school building. The building will be ready for use next September.

—Abilene, Tex. Tentative plans have been completed for a new elementary school and gymnasium. The buildings have been made possible through a school-bond issue of $125,000.

—Clayton, Mo. The school board has awarded contracts for three building projects, to cost $109,708. The buildings are to be completed by September 1.

—Humble, Tex. The citizens have approved a school-bond issue of $140,000 for a new school building.

—Grady, N. Mex. School District No. 61, of Curry county will shortly vote on a bond issue of $36,000 for a new school.

—Bogata, Tex. On March 16, the citizens approved a school-bond issue of $16,000 for additions and improvements to the school plant.

—Racine, Wis. The school board has begun a study of the new ten-year school-building program prepared by Supt. F. M. Longanecker. The program provides for the immediate as well as the future building needs of the school system.

—Oakland, Calif. A report of the 1924 school-building program just completed, compiled by Mr. D. B. Rice, business manager of the school board, has been issued by the board. The program provided for 38 schools and was completed at a cost of $9,600,000. Seven sales of bonds for financing the construction work were made during the five years since the bonds were voted. The largest was in 1925, when $1,040,000 were sold at a premium of $55,419.

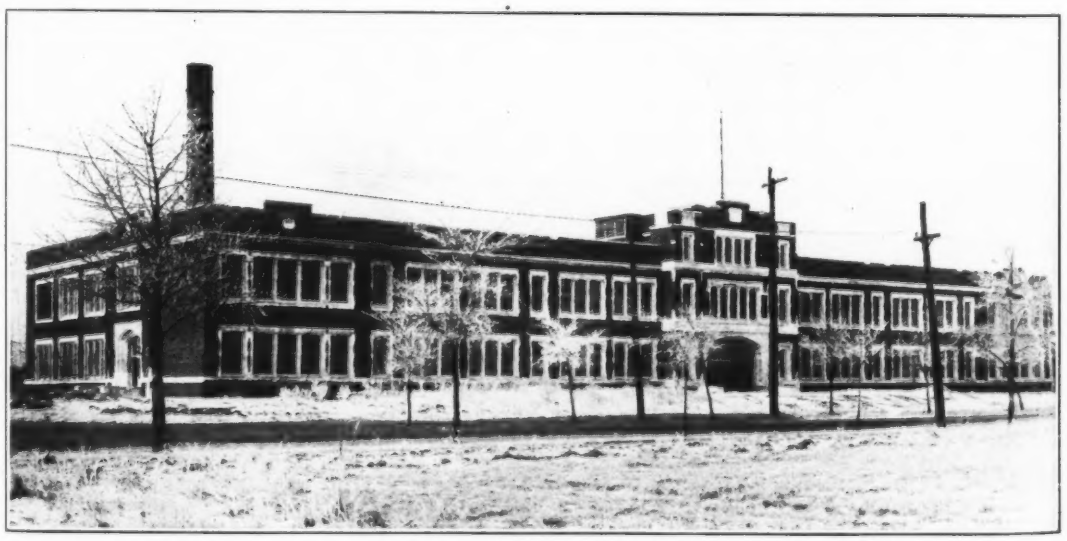
—Knoxville, Tenn. Upon the suggestion of Dr. H. H. McCampbell, the school board has ordered that principals give strict attention to the matter of fire drills. Each principal is required to present a report of fire drills. The action is the result of reports that many schools fail to hold regular fire drills as required by the rules of the board.

—Shawnee, Okla. An extensive program of school-ground beautification will be put into operation this spring. The program calls for the planting of flowers and shrubbery at all the school buildings. Playgrounds will be cleared, grass planted, and the entire surroundings made more attractive. Students in the schools have been invited to cooperate with the school faculties in the improvement of the school grounds.

—St. Louis, Mo. The school board has adopted new rules to govern the procedure in receiving bids for school construction work. Under the rules, all bids will be deemed final, conclusive, and irrevocable, and no bid will be subject to correction or amendment for any error or miscalculation. No bid may be withdrawn prior to the close of the next regular meeting of the board of education next succeeding the opening of bids, and the failure or the refusal of the bidder to comply with the award made to him will cause him to forfeit his deposit and render him liable to the board for all damages caused by reason of such breach of obligation.

No bids will be entertained unless accompanied by a certified check payable to the board of education, or by a certificate from the secretary and treasurer that the person making the bid had deposited a sum in cash, which check or cash deposit

(Continued on Page 120)



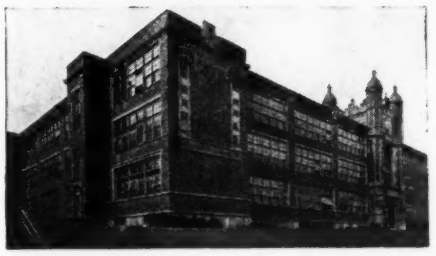
EAST HIGH SCHOOL, SUPERIOR, WIS.
F. E. Johnson, Architect, Superior, Wis.

This building was constructed at a cost of $250,000. It contains 23 classrooms, a splendid auditorium planned to seat 600 pupils, a large gymnasium, lunch room, hospital room, laboratories, library, and other rooms characterizing a modern school building.

The material employed in construction is red brick with sandstone facings, copings, and ornamentation. The dimensions of the building are 256 feet by 120 feet. The structure will serve for both senior and junior high-school purposes. F. E. Johnson of Superior, Wis., is the architect.

Schools *from coast to coast* use VULCAN RANGES

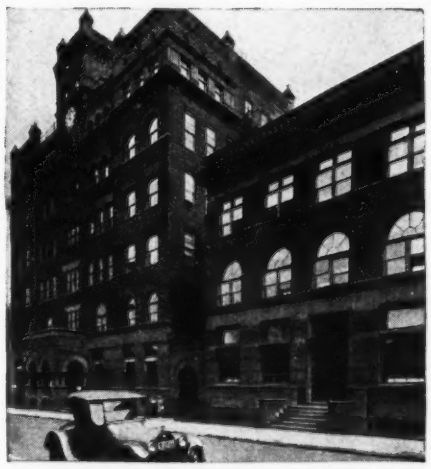
for their capacity, speed, economy and dependability.



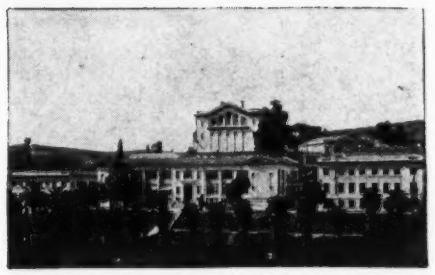
Junior High School, Scranton, Pa.; Vulcan equipped by Hyde Park Gas Company . . . includes Vulcan all "Hot-Top" Gas Ranges, and bake oven.

Notre Dame University, South Bend, Indiana; Vulcan equipment installed by Duparquet Huot & Moneuse Company . . . includes Vulcan all "Hot-Top" Gas Ranges, and Vulcan bakers' stove.

Pratt Institute, Brooklyn, N. Y.; Vulcan equipment installed by Albert Pick-Barth Co. and Duparquet Huot & Moneuse Co....includes four Vulcan all "Hot-Top" Gas Ranges, one Vulcan bake oven, one Vulcan broiler, and two Vulcan roasting ovens.



Where cooking demands are most exacting, Vulcan gives the greatest satisfaction.



Franklin High School, Los Angeles, Cal.; Vulcan equipment installed by Northwest Gas & Electric Equipment Co....includes Vulcan all "Hot-Top" Ranges.

George Washington High School, New York City; Vulcan equipment installed by E. Kronman, Inc.... includes Vulcan all "Hot-Top" Gas Ranges.

Educational institutions, like hotels, restaurants, clubs and hospitals, have found that Vulcan "Hot-Top" Gas Ranges provide them with the best cooking service, at lowest operating and maintenance cost.

Vulcan is an improved type of heavy duty gas range, whose enclosed top can be heated red in a few minutes and kept hot with one or more of its burners extinguished. Vulcans give the greatest cooking capacity in small space. Vulcans have low fuel and upkeep cost. Vulcans are giving satisfactory service under every requirement.

When leading educational institutions from coast to coast, as a result of satisfactory operating experience, install Vulcan after Vulcan, isn't it worth your while to send for the Vulcan book on cooking equipment?

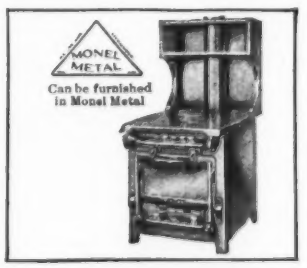
Hotel Department: **Standard Gas Equipment Corp., 18 East 41st Street, New York.**

Pacific Coast Distributor: **Northwest Gas & Electric Equipment Co., Portland, San Francisco, Los Angeles.**

Among thousands of users of VULCAN *cooking equipment are:*

New York City Schools
Vassar College
Roosevelt High School
Drury College
Providence High School

VULCAN GAS HOT TOP RANGES



VAN CAFETERIA EQUIPMENT
Is at the Head of Its Class
It passes every examination in economy, appearance and performance with the highest honors. Schools with VAN Cafeterias serve more pupils better, at lower cost and less labor. Our engineers will gladly show you why. Or, if you are planning to discard obsolete units, remember that VAN replacements are FINAL!
Write for Book Y93 "School Cafeterias."
Behind Van Equipment is the most authoritative and widespread engineering organization in the world. You are assured of a scientific plan, an economical arrangement and correct equipment.
The John Van Range Co.
EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD
Cincinnati
CHICAGO—1200 West 35th Street. NEW YORK—38 Cooper Square
Division of Albert Pick-Barth Company, Inc.

(Continued from Page 118)

may be in such an amount as may be required by the commissioner of school buildings, based upon the cost of the work as estimated by him, and in accordance with the established schedule.

—Yakima, Wash. The school board has approved a resolution providing for blanket insurance of the school buildings in the amount of $1,170,798, covering 90 per cent of the value of the buildings and equipment. Twenty-five insurance companies are included in the new policy, which will cost about $200 more than the former plan during the three-year period that the policies will run.

—Terre Haute, Ind. The school board has taken steps toward a readjustment of the insurance on the school buildings. Under the proposed plan, the number of companies will be reduced from 167 to 40. The school buildings will be divided into blocks of five, with the result that each building will be covered by three or four companies.

The insurance is to be divided by the amount of the premium, rather than by the amount of the insurance. Each member will award one fifth of the total amount to the companies which he designates.

—Chicago, Ill. The board of education has adopted the educational department's recommendations providing for the erection of 16 new school buildings and the completion of 25 other buildings during the school year 1929. The new buildings will provide facilities for 24,000 additional students and will be financed through a building fund of $10,000,000. In view of the fact that the cost of the buildings will reach $20,000,000, it is planned to complete only a part of the program this year.

—Lancaster, Pa. The new Reservoir Street School was dedicated on March 6, with a fitting program, in which the school officials, the parents, and school children participated. The building was erected at a cost of $226,255.

—Franklin, Pa. During the past four years, the school board has renovated two school buildings, at a cost of $110,000. During the school year 1929-30, the board plans further school construction.

—Shoshone, Idaho. At a school election held on March 9, the citizens approved a school-bond issue of $85,000, to be applied with the returns on an insurance policy of $43,000 for a new school building. The plans provide for a junior-senior high school, to be erected on the site of the old building, and a new grade school to be erected on another site. Both buildings are to be completed in time for the fall opening of schools in September.

—Cedar Rapids, Iowa. The school board has awarded the contract for plans of the new grade school to replace the Harrison School recently destroyed by fire. The building will be erected on a five-acre site costing $8,250.

—Hellertown, Pa. The school board is completing plans for the submission of a bond issue to the voters at the November election. The proceeds of the bonds will be used for the erection of a new school building.

—Wirt, Okla. The new Dundee School in Carter county is nearing completion. The building contains a study hall, a library, and an auditorium, in addition to ten classrooms, and will be completed at a cost of $70,000. Dundee is an independent rural school, with an enrollment of 140 in the senior high school and 430 in the grades.

—Jamestown, N. Dak. A contract has been awarded for the construction of a ten-room grade school, to cost $85,000. Mr. E. R. Boyd of Jamestown is the architect.

—East Stroudsburg, Pa. The school board will build an eight-room annex to the present school building.

—Allentown, Pa. The school board is completing plans for a school-bond issue of $850,000 for the erection of an addition to the senior high school, and for the completion of the Cedfield Memorial Athletic Field.

—Portland, Oreg. The school district recently sold $1,000,000 in bonds of the 1926 bond issue at par, with 4½ per cent interest. The bonds were dated March 1, 1929.

—Guymon, Okla. The school board has erected two school buildings, one a four-classroom building costing $30,000, and the other a six-classroom building costing $20,000.

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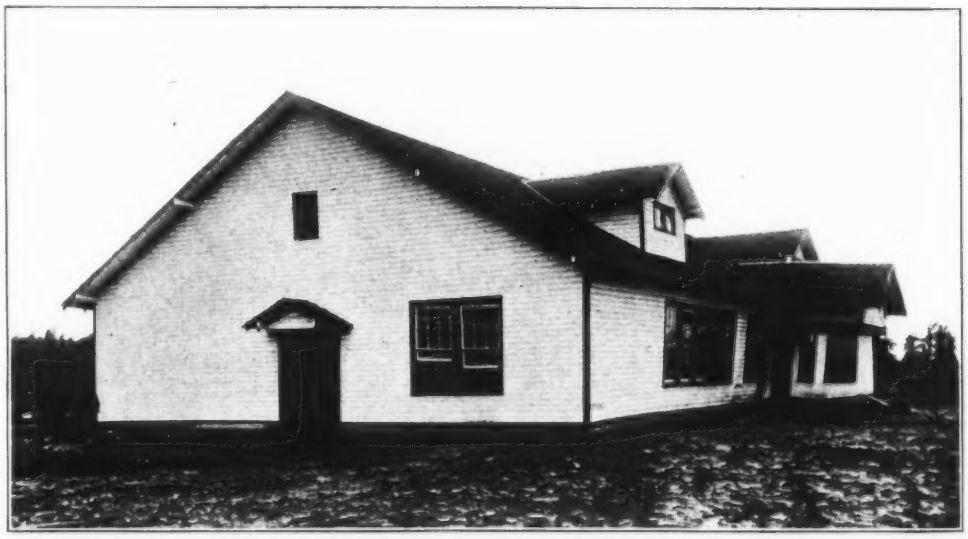
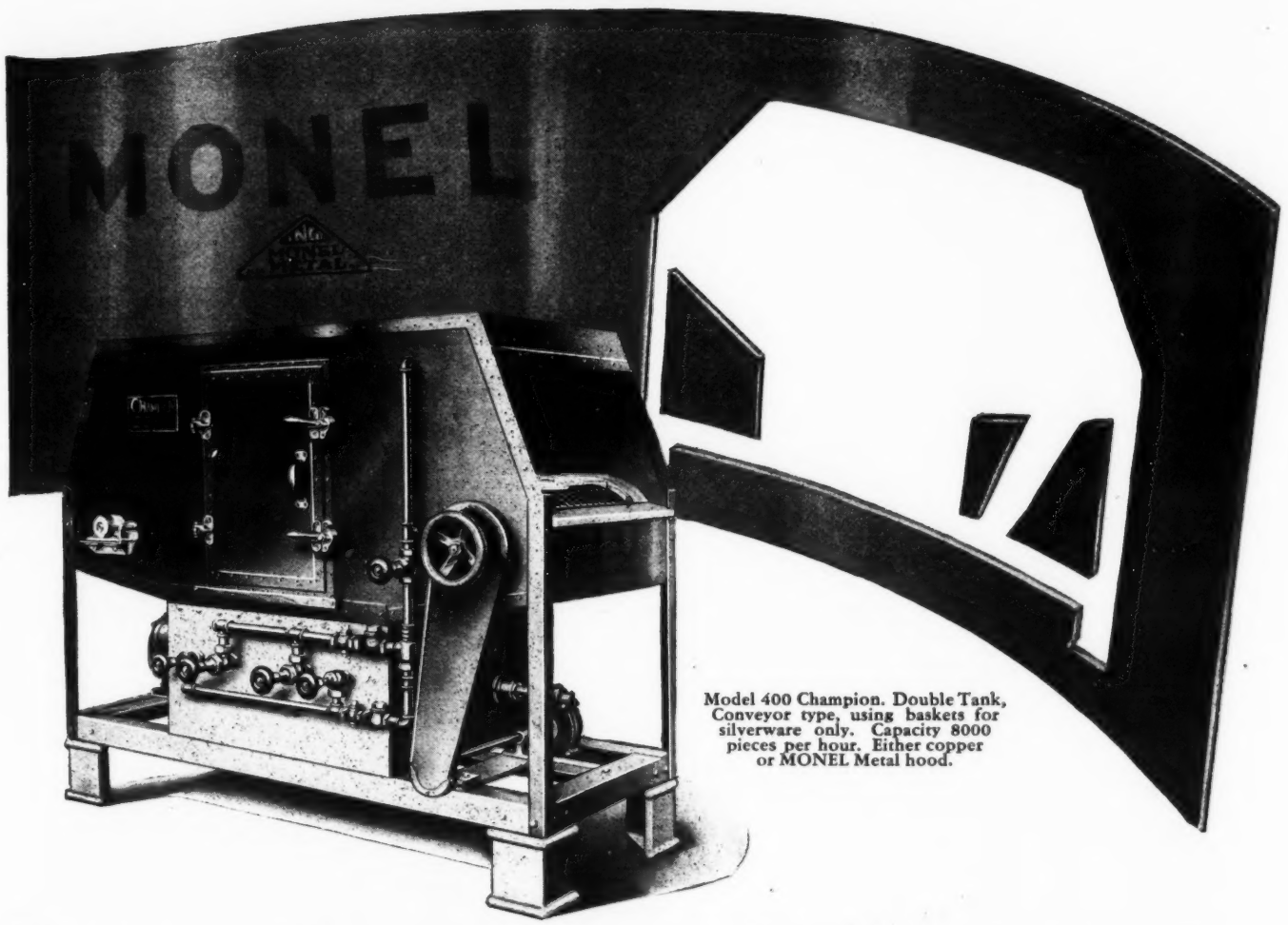


DOES POOR CONSTRUCTION PAY?
The schoolhouse in Liberty, S. Car., which is 150 feet long and 60 feet wide, was moved 20 feet from its foundation by a wind storm which swept the surrounding country. The storm caused the death of 7 persons and the injury of many others. (Int. Newsreel Photo.)



Model 400 Champion. Double Tank, Conveyor type, using baskets for silverware only. Capacity 8000 pieces per hour. Either copper or MONEL Metal hood.

FOR MODERN KITCHENS—

BECAUSE of its inherent cleanliness, Monel is the ideal metal for use in building kitchen equipment. Its freedom from rust, verdigris and other poisonous matter—its strength, durability and cleaning ease are all considerations of great importance.

Champion Dish Washers are offered with Monel Metal hoods and Monel tank sheathings. So equipped, Champion represents the acme of cleanliness and sanitation. It offers to the user of kitchen equipment the most economical, easiest maintained dish washing method that money can buy.

Send for literature showing the 9 Champion models and outlining the reasons why Champion brings reduced overhead—greater profits.

CHAMPION DISH WASHING EQUIPMENT OF MONEL METAL

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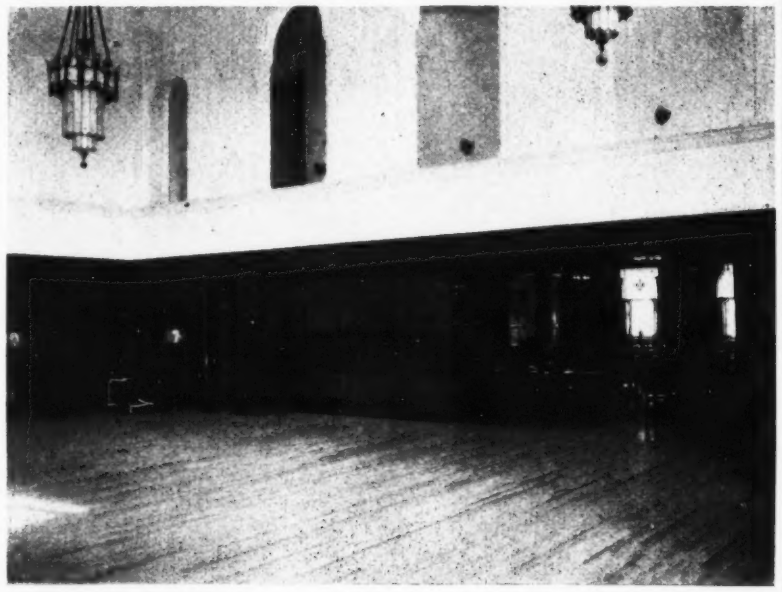

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Yet HORN Partitions are beautiful as well, and can be finished to harmonize perfectly with the most costly and elaborate interiors.

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Above: Coldwell "L-Twin" Motor Lawn Mower and Roller. Mows and rolls 4 to 6 acres a day. With gang units attached it cuts 10 acres a day on one gallon of gasoline.

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ACTUAL use throughout the country has proven that Coldwell Motor Lawn Mowers and Rollers are the most economical and efficient machines for mowing and rolling large areas. Equipped with full-width drive rollers, machines may be used for combined rolling and mowing or for separate rolling only. Principal weight of mowers is carried on roller, which prevents injury to the turf and permits of trimming clean along walks and driveways.

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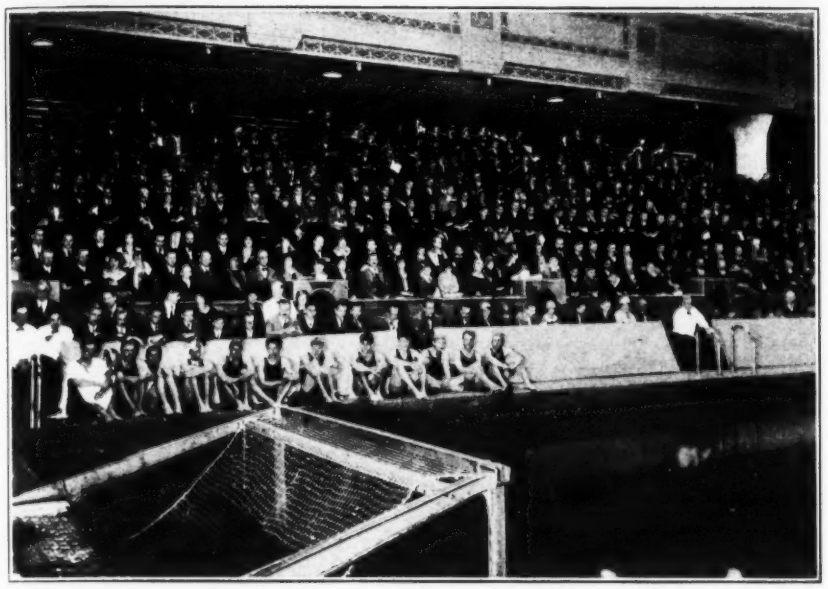
Portable Bleacher Seats

STRONG - - - - - SAFE - - - - - COMFORTABLE - - - - - GOOD-LOOKING

EASY TO ERECT AND TRANSPORT, OCCUPYING MINIMUM SPACE IN STORAGE. EVERY SECTION AN INDEPENDENT UNIT SUPPORTED ON FOUR STRINGERS. STEEL AND MALLEABLE CASTINGS CARRY EVERY STRAIN.



Intramural Sports Building, University of Michigan, Ann Arbor. Showing the novel arrangement by which the Auxiliary Gymnasium is utilized for spectators during swimming events, — the wall which normally separates these two rooms being lifted by means of motor and counter weights.
This photograph was taken at the official opening of the Natatorium on February 2nd when teams from the Universities of Indiana and Michigan met.
The spectators are seated on DETROIT ATLAS PORTABLE BLEACHER SEATS specially designed to permit a clear view of the entire pool for every person present.

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(Continued from Page 120)

—Alhambra, Calif. The school board will shortly call a school-bond election to vote bonds for school-building improvements. It is expected that the new improvements will be completed by the fall term of 1930.

—The David Ladd Rockwell Library building for the Kent State Normal School, Kent, Ohio, was dedicated on March 22 and 23, with a complete dedicatory program. The presentation of the building was made by Mr. David Ladd Rockwell, president of the board of trustees, and the acceptance was made by Dr. James O. Engleman, president of the Kent State College. Supt. Otto J. Korb, of the South Euclid public-school system, gave a talk on "Library Service in the Field."

—Tullahoma, Tenn. The board of education has completed a new high school, at a cost of $75,000. The high school serves a school population of 1,000 and enjoys an A grade rating given by the state high-school inspector.

—Akron, Ohio. The school board has approved plans for an eighteen-room elementary school, to be erected in Maple Valley, at a cost of $250,000. Bids for the construction work were received the latter part of April and the building will be ready for occupancy in September.

—Talmadge, Ohio. Suit has been begun in the Court of Common Pleas of Summit county by David Coffman, J. O. Black, and C. A. Moor against the the local school board, asking for an injunction to restrain the board from erecting a new school on a site not previously specified prior to the bond-issue election. In place of using the chosen site, the board purchased a new site and sought to erect the building 1200 feet from the site previously specified.

—Minneapolis, Minn. The school board has adopted a resolution, providing that the city council and the board of estimate and taxation be asked to issue and sell in 1929 municipal bonds in the amount of $941,558 at par value. The proceeds of the bonds will be used for the erection, construction, and equipment of new school buildings and additions to buildings, and the acquisition of school sites.

—Portsmouth, Ohio. The school board has employed Mr. Wm. B. Ittner as consulting architect for the erection of four junior-elementary schools, at a cost of approximately $800,000. Bonds in the amount of $500,000 were voted for the purpose last year, and an additional proposition of $250,000 will be submitted to the voters at a special election.

—Newberg, Oreg. The school board has reorganized one of the larger grade buildings according to the platoon plan. The building has been remodeled on the basis of the new plan, at a cost of about $8,000.

—Shaker Heights, Ohio. The school board has employed the firm of Hubbel and Benes of Cleveland, Ohio, as architects for the new high school. Mr. Walter R. McCornack has been appointed as school-building consultant.

—The citizens of Saline, Mich., on March 9, defeated a school-bond issue of $150,000 by a vote of 181 to 148.

—Burlington, Iowa. On March 11, the citizens approved a school-bond issue of $600,000 for school-building purposes. Another proposition of $100,000 for a gymnasium was lost by a small margin.

The proceeds of the bond issue will be used for an elementary-and-junior-high-school unit, a junior high school, and an elementary unit, as well as additions to two of the existing schools.

—Anderson, Mo. At an election held on March 14, the voters approved a school-bond issue of $47,000 for school-building purposes. The proceeds of the bond issue will be used for the erection of a high school.

—East Peoria, Ill. The voters recently approved a school-bond issue of $82,000 for the building of an addition to the local high school. The building of an addition has been made necessary because of an increase in the school enrollment.

—Kalamazoo, Mich. Under a revised rule of the school board, the superintendent of school buildings and grounds will have general charge of all repair and alteration work done in the buildings, or on the grounds of the schools, will be given assistance in the preparation of plans for repair and new work, and will have charge of the installation of mechanical work, new and repair, and will act as superintendent of all other new work as directed by the board.

—The board of superintendents of New York City, on March 15, adopted a resolution opposing the inclusion of public-library facilities in future school buildings, especially in structures in the outlying sections. The board gave as a reason the fact that the public will not use a library which is a part of a public-school building.

It appears that the board of estimate had planned to set aside 3,500 square feet of space for library purposes in every five or ten school buildings to be erected. It was pointed out that there would be no saving, and that it would cost the city more to set aside 3,500 square feet for public library purposes in a school building than it would cost to erect a building for library purposes alone.

—New York, N. Y. Auditoriums for the smaller school buildings, or for the first units of larger buildings have been recommended by the board of superintendents. In the future in planning for the erection of new three-story elementary schools of a capacity of between 700 and 800, an assembly to accommodate about 250 will be provided by erecting a part of the C wing one classroom deep, and two and one half classrooms wide.

In planning for the erection of new four-story elementary-school buildings, the auditorium and gymnasium wing will be erected in conjunction with the building of the A section.

—At the school election held on March 12, the voters of Seattle, Wash., approved a school-bond issue of $2,500,000. The proposition was carried with a vote of 27,657 for, and 12,397 against the bond issue. The proceeds of the bonds will be devoted to the purchase and improvement of sites, and the construction of new buildings and additions.

—Sulphur Springs, Tex. The citizens recently approved a school-bond issue for the erection of a new school.

—Dundee, Mich. At an election on March 18, the citizens approved bonds in the amount of $150,000 for a new high school. Construction work will start this spring and the building will be ready for use next September.

—Saginaw, Mich. An extensive school-building program has been undertaken by the school authorities. The first new building, the Potter School, was occupied on April 1. It contains a gymnasium, shops, home economics rooms, and twenty classrooms and is fully planned and equipped for community center activities. The building has been so planned that each single unit may be used without interfering with the rest of the building.

The Handley School, to be completed this spring, contains seventeen classrooms, in addition to an auditorium a cafeteria, a gymnasium, and special rooms for physically defective children.

(Concluded on Page 126)

Velum

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High School
Muncie, Ind.

Junior High School
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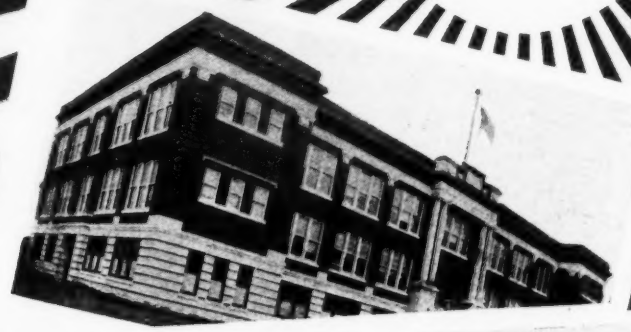
Soft, uniform tones with soft light diffusion — with no disturbing glare! No laps or brush marks. Send for color cards and booklet.



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OAKITE

TRADE MARK REG. U.S. PAT. OFF.

Industrial Cleaning Materials and Methods

(Continued from Page 123)

—At an election held on March 5, the citizens of Willow City, N. Dak., defeated a bond issue for a third time.

—By a vote of 194 to 184, the citizens of Coopersville, Mich., recently defeated a bond issue of $75,000 for a new school. This was the fourth time the same proposition had been defeated.

—Franklin, Ill. The voters of the school district have been asked to approve a bond issue for a community high school, to cost $55,000.

—Eldon, Mo. At an election on March 21, the citizens defeated a bond issue of $35,000 for a high-school gymnasium.

—Springfield, Mo. The citizens have been asked to approve a bond issue of $1,500,000 for a school-building program to be carried out during the next year.

—Chicago, Ill. Sixteen school-building projects have recently been recommended to the school board by Supt. William J. Bogan. The new buildings are part of the 1929 building program and will provide 23,900 additional seats for pupils not at present accomodated. It is expected that the cost of the construction work will reach $20,000,000.

Twenty-five other school buildings started during the past year are now in various stages of construction and will be completed within a short time.

The financing of this year's program will be carried out by means of a $10,000,000 fund which has been included in the year's budget for new buildings, and a $9,000,000 fund for the completion of buildings already started.

—Alhambra, Calif. The board of education has authorized the calling of a school-bond election to vote bonds in the amount of $447,000. The proceeds of the bond issue will be used for the purchase of three sites, the erection of two buildings, and the building of additions to three existing structures.

—Washburn, N. Dak. The citizens, at an election on February 26, voted a school-bond issue of $65,000 for an addition to the school building. Construction work will begin about June 1.

—Fremont, Ohio. The school board has included in its budget, an appropriation of $350,000 for financing the new school-building program now under way. Construction work has begun on the two new grade schools.

—A bond-issue program in the amount of $472,583 has been submitted to the lower house of the Maryland state legislature for the purpose of taking care of the increase in school population of the suburban area of Montgomery county. The proposed school construction has the approval of Mr. E. W. Broome, superintendent of schools in Montgomery county and the county civic federation.

—Gig Harbor, Wash. At the Peninsula school election held on March 4, a $5,000 bond issue and an eight-mill school-tax levy were carried by the voters of eight of the nine consolidated districts.

—Mt. Vernon, N. Y. The school board has called a special meeting to discuss plans for the proposed school-building program. A special bond issue is planned to provide for the purchase of new school sites, and to prepare for the development of the schools on a systematic basis. The program is intended to cover the needs of the city schools for the next ten years.

—The school board of Pelham, N. Y., recently conducted a sale of school bonds in the amount of $575,000. The proceeds of the bonds will be used for the erection of an addition to the Memorial High School.

—Pittsburgh, Pa. The north side chamber of commerce is sponsoring a movement to replace the present Allegheny High School with a new modern structure.

—Altoona, Pa. The school board has adopted a resolution providing for an increase in the rental price for the use of the high-school auditorium. By an order of the board, the charge for using the auditorium will be $15 for each evening of public performance, $10 for one evening rehearsal, and $5 for each additional rehearsal in the auditorium.

—Taunton, Mass. By a vote of two to one, the school board recently refused to turn the repairs of the schools over to the town. One of the school-board members had proposed that the matter be taken over by the town for the reason that the work could be done cheaper by the town.

—Guthrie Center, Iowa. At a recent school election, the voters approved a school-bond issue of $80,000 for the erection of a high school. The pro-

—Bartlesville, Okla. The school board recently conducted a sale of school bonds in the amount of $200,000. The bonds were recently voted for school-building purposes.
position was carried by a vote of 608 to 82.

—Blackfoot, Idaho. School Dist. No. 55, near Firth, has voted bonds in the amount of $12,000 for a new grade school and a gymnasium. The buildings will be completed for the new fall term.

—Hardinville, Tex. Bonds have been voted for a new school building.

—New York, N. Y. Auditoriums for the smaller school buildings, or for the first units of larger buildings, have been recommended by the board of superintendents.

In the future, in planning for the erection of three-story elementary school buildings, of a capacity of between 700 and 800, an assembly to accommodate about 250 persons will be provided by erecting a part of the C wing one classroom unit deep and two and one half classrooms wide.

In planning for the erection of four-story elementary buildings, it is planned to have the auditorium and gymnasium wing erected in conjunction with the building of the A section.

—Chicopee, Mass. The school board is facing the probable necessity of closing the schools for a portion of the current fiscal year through a reduction of the school budget. It appears that the mayor has extracted $51,841 from the school request of $617,841, so that the amount left available to the schools is $566,000. The reduction has placed the school department in the position of being faced with keeping the operating expenses down to within approximately the expenditures of 1927. The increase of the 1928 expenditures over the 1927 expenditures was approximately $23,000. By cutting $51,841 from the 1929 request, the mayor has practically kept the schools to the 1928 expenditures, the difference being an increase of $8,000.

RECORD PROGRESS

A pamphlet recording in a series of interesting illustrations the school-building program in Oklahoma City, Oklahoma, during the period of 1928 to 1929, has been recently published. It contains photographic reproductions of four high-school buildings, a central administration building, six grade-school buildings, and ten additions to existing buildings.

The work was carried on by five local architectural firms, nine general contracting firms, and four heating and plumbing firms.

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THE splendid new Rhodes Haverty Building in Atlanta with its commanding height and classic facade, is evidence of the welcome that southern construction is extending to Par-Lock—introduced and applied by The Par-Lock Southern Appliers, Inc., with sub-offices in nine cities.

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TRENTON, 339 Broad St. Bank Bldg.
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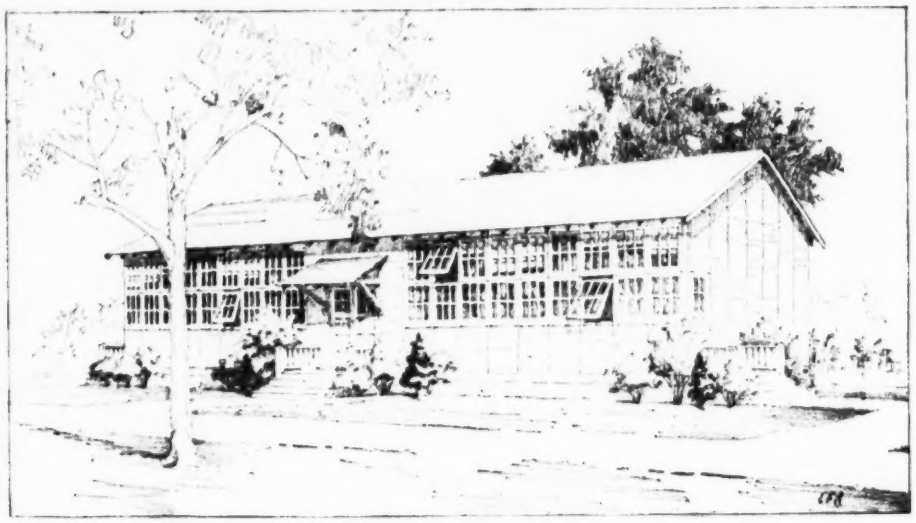
WILKES-BARRE, PA. 904 Second Nat'l Bank Building



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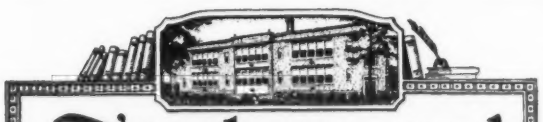

Teachers and Administration

JEFFERSON CITY RULES GOVERNING THE APPOINTMENT OF TEACHERS

The school board of Jefferson City, Mo., has adopted new regulations governing the qualifications for the appointment of teachers in the elementary and high schools, and in the special departments of the school system. The rules are as follows:

For the purpose of employing teachers, all applicants shall be classed in four groups, namely: Apprentice, elementary, high school (academic subjects), and special.

A—Apprentice teachers. 1. The board each year may employ not more than three teachers having the equivalent of two years of teachers' college training, with less than two years of experience who shall serve as apprentice teachers. Such teachers shall be allowed one half the minimum monthly salary of elementary teachers and shall serve as substitute and relief teachers, subject to the assignment of the superintendent.

2. After one year, upon the recommendation of the superintendent, apprentice teachers may be eligible for regular appointment in the elementary schools, provided that apprentices having less than 75 hours must attend an approved summer school for two summers following appointment.

B—Elementary teachers. 1. Applicants for appointment as elementary teachers must present evidence of a minimum of 60 hours of teachers' college training or its equivalent, which shall include two and one half hours in educational psychology, two and one half hours in technique of teaching, two and one half hours in elementary-school management, two and one half hours in observation and practice teaching, two hours in physical education and hygiene, or their equivalent. Applicants must also present evidence of at least two years of successful teaching experience.

2. Applicants with 90 hours of teachers' college training or its equivalent, including the above courses, may be admitted with one year of successful teaching experience.

3. Teachers with more than two years of experience may receive an additional salary increment for each two years of additional experience under competent supervision, provided that not more than two such increments shall be allowed for such experience.

For Example: A teacher entering with four years of approved experience would receive the salary as a teacher of like rank teaching her second year in the Jefferson City schools, and a teacher with six years or more of teaching experience would enter on the third year salary level.

C—High-school teachers (Academic Subjects). 1. Applicants for position of instructor in the academic subjects of the junior and senior high schools must present evidence of the completion of four years of standard college work above the high school, which shall include at least eighteen hours of educational subjects, including two and one half hours in principles of secondary education, two and one half hours in educational psychology, two and one half hours in technique of high-school teaching, two and one half hours of observation and practice teaching.

2. High-school teachers must present evidence of the completion of at least eighteen hours of college work in the major subjects taught.

3. High-school teachers must present evidence of two years of successful teaching for admission to the system. Teachers with more than two years of experience may receive an additional salary increment for each two years of additional high-school experience under competent supervision, provided that not more than three such increments shall be allowed for such experience.

For Example: A teacher entering with four years of approval experience would receive the same salary as a teacher of like rank teaching her second year in the Jefferson City schools, and a teacher with six years or more of teaching experience would enter on the third-year salary level.

D—Special teachers. 1. This class will include all elementary and secondary principals, supervisors, teachers of vocational subjects, and physical education.

2. They must give evidence of having satisfactorily completed at least the minimum amount of work of an academic and professional nature prescribed for the various school units to which they shall be assigned, which shall include at least eighteen hours of special preparation for the subject to be taught.

3. In the absence of experienced applicants in this class, the board by a majority vote may waive the experience rule in this classification.

Nothing in the foregoing statement of qualifications shall be construed as retroactive. Teachers employed in the system at present shall continue in their present positions so long as service is satisfactory, subject to the published regulations of the North Central Association and the state department of education.

Each teacher, upon appointment to a position, is required to file with the secretary a legal certificate to teach in the public schools of Missouri and a health certificate executed by a reputable physician, which must be renewed annually. Before beginning work each teacher must file a complete transcript of credits fully signed and sealed by the proper college authorities.

DIVERSITY OF RULES GOVERNING TEACHERS

—Rules and regulations of school officials governing the conduct of teachers are so numerous and cover such a wide variety of detailed items that the exact status of a teacher today is almost undefinable, according to Dr. William Anderson, of New York City, who has recently completed an extensive survey of school systems in 4 states.

Working under Dr. N. L. Englehardt, Dr. Anderson gathered data from all parts of the country. He studied contracts signed by teachers and superintendents, the rules of boards of education, the rules of state educational agencies, and the laws passed by state legislatures.

Dr. Anderson found that in more than 90 per cent of the school systems prospective teachers were required to sign contracts for a year's work. In most of the larger school systems, the contracts consisted of simple forms for the sake of keeping records, but in the smaller systems, the contracts were full of miscellaneous provisions.

The clauses found most frequently in the contracts were those providing that teachers must attend institute meetings, must not be absent from their duties without reasonable excuse, and must be in good health. One fourth of the cities under 20,000 population reported that a contract could

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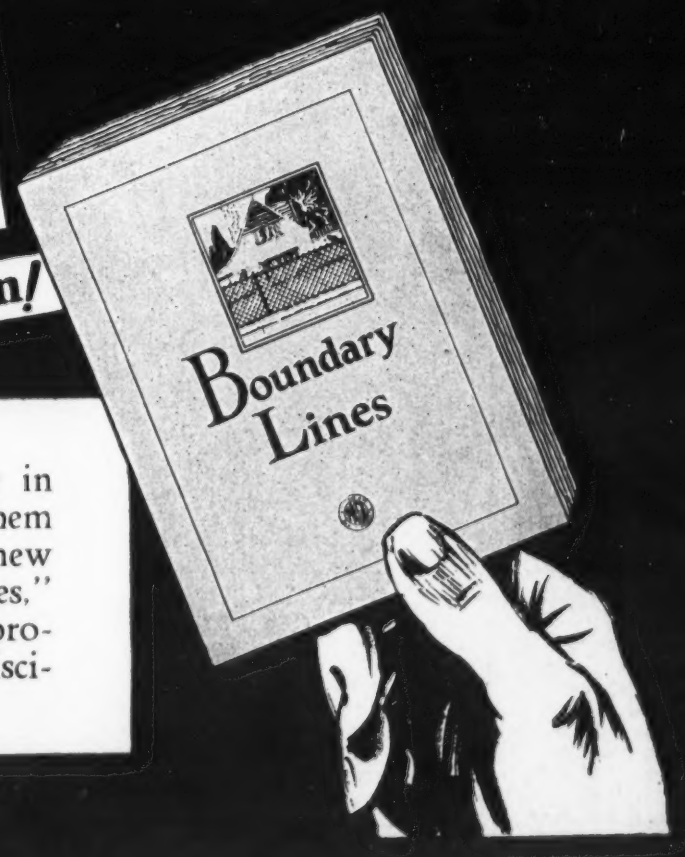

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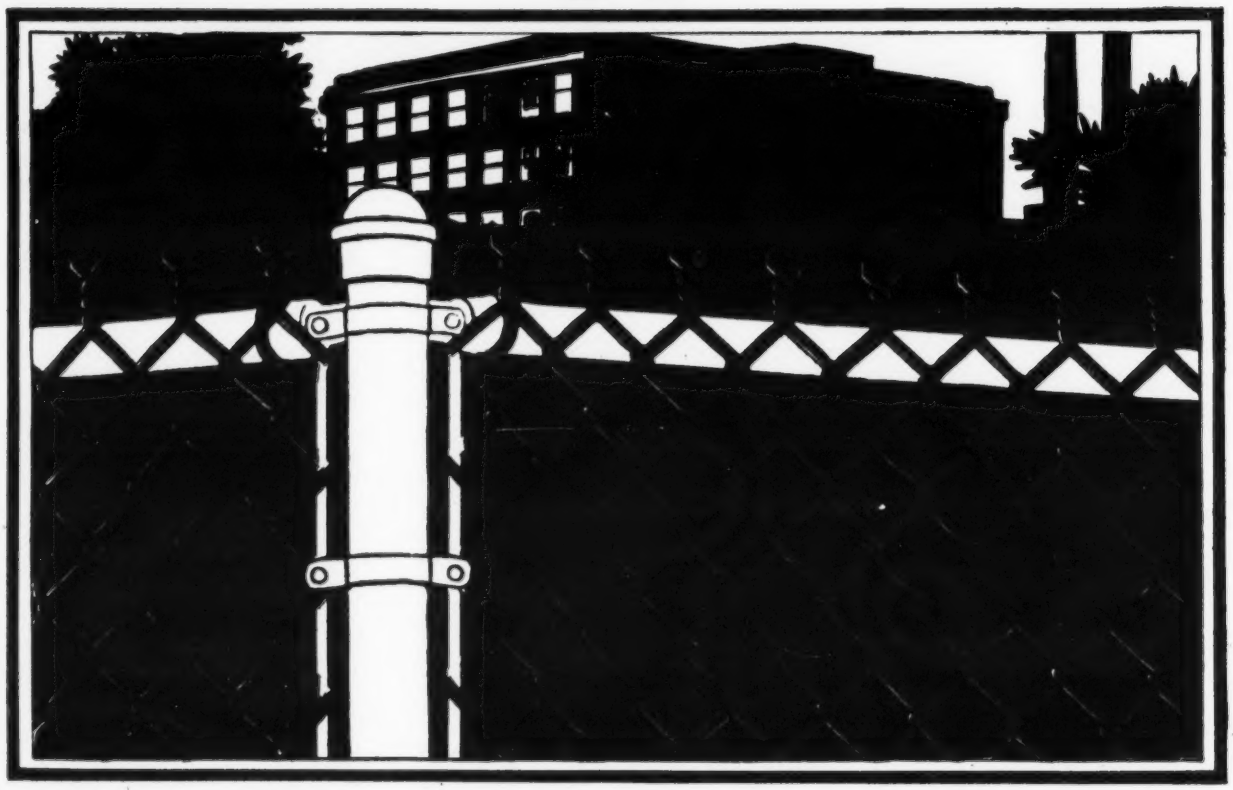

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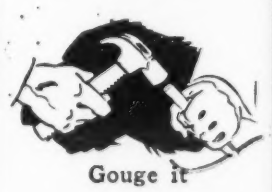

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be voided if a woman teacher married during the school year.

A less pronounced variance was found among the rules and regulations laid down by boards of education, 86 of which were examined by the investigator, since the system of issuing printed lists of rules was limited for the most part to the larger cities.

A study of the laws of the various states regarding education showed a larger number of restrictions upon teachers, enumerating several specific duties. In addition to routine matters regarding tenure, salaries, and dismissals, these were found to include such items as "to keep self without reproach," "not to wear religious garb while teaching," "to be not addicted to tobacco, opiates, or intoxicants," and "to conduct self to command pupil respect." The provision against smoking is included in the Tennessee statutes.

Among the causes listed for dismissal of teachers are immorality, inefficiency, intemperance, cruelty, tuberculosis, inability of a teacher to keep the class attendance above a specified number, partiality, treasonable acts or words, violation of the law, failure to read the Bible in school, acting as agent for a school supply company, and failure to attend an institute.

Dr. Anderson found that, on the whole, there is a tendency toward increased state control. Among the leaders in this movement since 1905 has been New York state, which stands far ahead of all the other states in the establishment of minimum professional standards and ethical requirements.

ADOPT TWELVE-PAYMENT PLAN

—The school board of Negaunee, Mich., on March 4, adopted the twelve months' plan of paying teachers. Under the new plan, the first pay checks are issued on the opening day of school in September; the July checks are issued on the last day of the school year in June; the last pay checks of the year are issued on the first day of August, and the others are issued on the first day of each calendar month.

A teacher who resigns at any time during the ten months' period of service may draw as many tenths of the annual salary as the number of months actually completed, provided the required thirty days' notice of resignation is given. Such a teacher may draw as many tenths of the annual salary as the number of months completed, minus one hundred dollars, provided the required notice has been given.

A teacher whose resignation takes effect at the end of the period of service in June would be permitted to draw both the July and August checks on the closing day of school.

ADOPTS SALARY SCHEDULE

—Guymon, Okla. The school board has adopted a salary schedule, providing new minimum and maximum salaries for teachers in the schools. Under the schedule, elementary teachers will begin at a minimum of $100 a month, with increases of $5 per month, up to a maximum of $125. Elementary teachers must have had two years of college work and one year of experience to be eligible for appointment.

In the high school, the teachers will begin at a minimum of $125 per month and will be given increases of $5 per month, up to a maximum of $150. High-school teachers must hold a degree and must have had one year of experience in order to be appointed to a teaching position.

Teachers lacking in outstanding qualifications may be appointed by the superintendent to any position at his discretion.

TEACHERS AND ADMINISTRATION

—Woonsocket, R. I. The school board has adopted a new salary schedule, providing for a change in the minimum and maximum salaries of teachers in the elementary, junior, and senior high schools. The schedule provides a minimum salary of $1,100, and a maximum of $1,650, for elementary teachers; a minimum of $1,200, and a maximum of $1,750, for junior high-school teachers; a minimum of $1,300, and a maximum of $1,900, for senior high-school teachers. The amount of the annual increment for each teacher is $100.

The new schedule provides an increase of $150 in the maximum salary for elementary teachers, $225 for junior high-school teachers, and $175 for senior high-school teachers.

—Minneapolis, Minn. The school board has adopted a resolution, providing for an increase in the maximum salary of junior high-school principals, from $3,000 to $3,600 per annum. The annual increment has also been increased from $125 to $150 per annum.

—Milwaukee, Wis. The school board has adopted a resolution providing that grade-school vice-principals shall receive a salary $100 in excess of their regular salary as grade-school teachers; junior-high-school vice-principals, if they have attained the maximum of the grade schedule for persons holding a college degree with a major in education, will receive $2,700 for the first year, $2,800 for the second year, and $2,900 for the third year and subsequent years of service; high-school vice-principals will receive $3,700 for the first year, $3,800 for the second year, and $3,900 for the third and subsequent years of service. Vice-principals will be designated by the superintendent and assigned to such schools and for such periods as he may direct.

—Enfield, Conn. The school board has revised the salary schedule, providing an increase in the maximum salaries of the teaching staff. The maximum for teachers in the elementary schools is $2,050, and for teachers in the high school $2,600. The maximum becomes effective during the school year 1930-31.

—Red Wing, Minn. The school board has raised the maximum salary of teachers in the junior high school. The maximum salary of seven teachers has been raised from $1,250 to $1,300.

—Danbury, Conn. The elementary teachers' association has asked the school board for an increase in the maximum salary for grade teachers, from $1,800 to $2,000 per annum, with an increase in the annual increment from $50 to $100.

—Cincinnati, Ohio. The school board has adopted a plan proposed by the joint committee on teachers, providing that the salary of student teachers for the years 1929 and 1930 shall be $600, and that the number of such teachers be limited to 100. It was estimated that approximately 165 new teachers would be needed in all departments for the next school year, and for the succeeding year. Of these, about 30 will be filled by teachers returning from leave of absence and by the reinstatement of former teachers, 35 will be held open for experienced teachers and for places in which there is an inadequate local supply, leaving 100 positions to be filled by graduates of the college of education.

—West Allis, Wis. The school board has recently approved a salary schedule, which provides that the salaries of teachers shall increase in proportion to the service.

—Waltham, Mass. In his annual report to the school board, Supt. W. H. Slayton presented recommendations for raising the standard of requirements for teachers, and also an outline of proposed minimum and maximum salaries for men teachers.

—Ten days' leave of absence with pay is allowed teachers and heads of schools in Schenectady, N. Y., each year for personal illness or for serious illness or death in the family. The leave is cumulative

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in whole or in part. When 100 or more days have been accumulated, the teacher may be granted a half year's leave of absence, on full pay, for study or travel, or for some other reason which will prove of value to the school system.

—Sapulpa, Okla. The school board has adopted a new plan of paying teachers for absence during illness. Under the plan, a teacher who is absent will be paid one third of her regular salary for all absences up to thirty days. The substitute will receive the remaining two thirds for the period of service. The plan in effect, relieves the school system of the burden in cases of absence and produces a saving of approximately $2,000 this year.

—Madison, Wis. Under a new rule adopted by the board of education on March 19, the marriage of a teacher during the school year will be equivalent to resignation. Supt. R. W. Bardwell pointed out that the marriage of a teacher during the school year upsets the school work and impairs the services of the teachers. It is the opinion of the board members that girls who attend the normal school to train for positions as teachers are entitled to be considered when vacancies are to be filled.

—Franklin, Pa. During the past year, the superintendent of schools requested the teachers of grades one to twelve, inclusive, to present any questions which they desired answered bearing upon problems connected with their work. The questions formed the subject matter for teachers' meetings. These meetings are held in special groups for teachers in primary, intermediate, and high schools. At these meetings, the superintendent gives his viewpoint and offers suggestions, as do also the teachers and principals.

—East Stroudsburg, Pa. The public-school system is being used as a training center for the State Teachers' College of East Stroudsburg.

—Mansfield, Mass. The school board has adopted a rule prohibiting the employment of married-women teachers. Teachers who marry during their period of service will not be retained under the rule.

—Cranston, R. I. The school board has been asked to approve a rule proposed by Mr. H. D. C. Dubois, a member, prohibiting the employment of married-women teachers. A teacher who marries during her term of service would automatically lose her position.

—Riverside, Calif. The anti-marriage law for teachers has been defeated by a court ruling giving a judgment of $2,100 and an order of reinstatement to Marion Boulette Johnston, a former music teacher. Mrs. Johnston had charged that the board of education dismissed her summarily without a hearing as required by the teacher's tenure act, and that she was deprived of a year's salary in the amount of $2,100.

—A bill now in the Colorado state legislature permits city-school districts to levy two fifths of a mill for pension purposes for the retirement of superannuated teachers. The present law permits urban school districts to levy a tax of one fifth of a mill for such a fund, which has been found insufficient for Colorado Springs.

—Supt. J. O. Chewning of Evansville, Ind., has presented a plan to the board, providing for the awarding of bonuses to teachers for the summer of 1929. Under the plan, a total of 100 bonuses of $100 each will be given for travel or study in the summer, under definite regulations which must be observed by the teachers. A similar plan was in operation during the last year.

TEACHER-TENURE FROM THE SCHOOL DIRECTOR'S VIEWPOINT

Mrs. Joseph Scattergood, West Chester, Pa.

The purpose of the present paper is to trace the events leading up to the preparation of a teacher-tenure bill and its presentation in the legislature. No tenure bill was introduced in the 1927 legislature, but a joint committee was appointed to work up enthusiasm for the use of a continuing form of contract for teacher tenure. A letter and a copy of the contract was sent to every county superintendent and district superintendent in the state, urging his cooperation in establishing this form of contract. Up to this time the question of tenure of office for public-school teachers had been opposed by school directors, but the time had come when it was proper to consider the advantages of the plan and to eliminate the unfavorable conditions prevailing in this and other states. It was found that grave injustice had been done many competent teachers who had become restless and uncomfortable in the weeks immediately preceding their reelection. This automatically reduced the efficiency of the teacher and the services rendered the children.

The tenure committee following a meeting with the legislative committee of the state education association, recommended that the continuing contract be put into the form of a bill and that it be presented to the 1929 legislature for enactment into law. This bill, if passed, will eliminate the general reelection and recontracting of teachers each year, and will guarantee to them a written notice at least thirty days before the end of the term in case their services are not desired during the ensuing year.

Under the tenure bill, the school board is as safely protected as the teacher, for no teacher is willing to subject her reputation to a possible inability to secure a position elsewhere, if she is told she is incompetent in that particular school, and is given time to resign and look elsewhere for a position. The question of competency is an educational and not a legal matter, and it should be decided on educational grounds.

There has been a great deal of interest in the subject of tenure in Pennsylvania. Some school boards are using a contract somewhat similar in principle, if not in form, to the present one. Of the states of the union, New Jersey has had tenure of contract the longest, or since 1910. In 1922, eleven states had enacted tenure laws in some form, including California, Colorado, Illinois, Louisiana, Maryland, Massachusetts, Montana, New Jersey, New York, Oregon, and Wisconsin. In Indiana, it was forced upon the school directors by the demands of the teachers. Philadelphia has a continuing contract in operation, with a probationary period of one year for its teachers. This probationary future is extended in rare cases to two years. This is a local law, just as Boston and Baltimore have local laws governing this matter.

The medical profession has made its requirements so high that the place of the physician in the community is never challenged except by the cults. So it must be with education, and as long as teachers are demanding more for themselves, they should automatically be a continuous part of the school system so long as their value to the schools and the community is maintained. Through tenure the good teachers will be left undisturbed in their positions, while the weak and inefficient will be obliged to look elsewhere for positions. One thing seems certain that where tenure legislation is in force, teacher turnover is reduced and teachers are not so liable to use the profession as a stepping-stone to another line of work.

In the proposal leading to the adoption of a continuing contract, the aim of the tenure committee has been to afford civil service protection to the teaching profession and to enable the teachers to do their work most effectively for the best interest of the boys and girls. With this idea in mind, it is possible to secure permanency for the teachers, and at the same time recognize the authority of boards of education.

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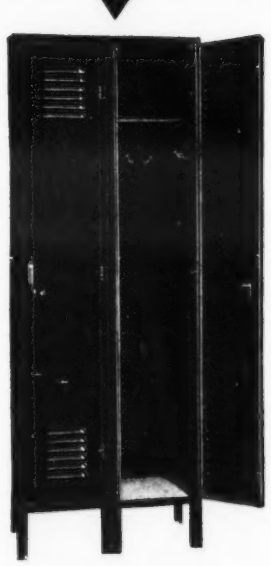

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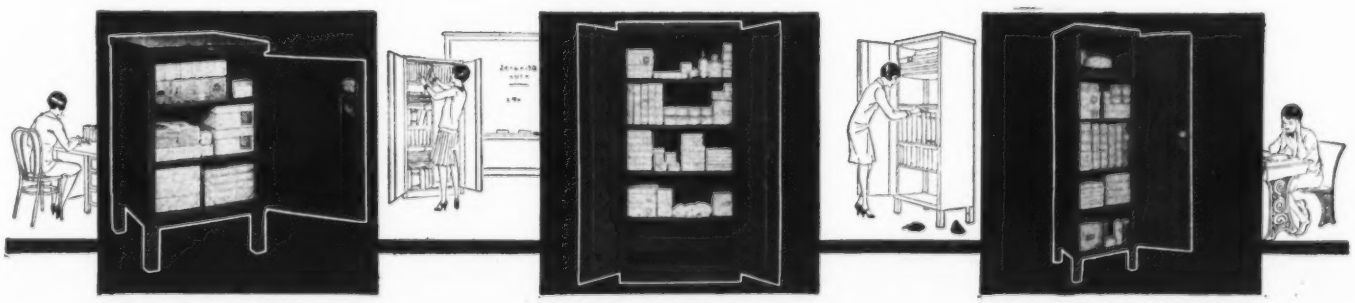

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SCHOOL ADMINISTRATION NOTES

COMMENCEMENT CLOTHES

The hundred and fifteen girls who graduate from the high school at Quincy, Illinois, this year have determined that it will require three dresses for commencement week. One for baccalaureate, one for class day and other functions, and the third for graduation.

This is working a hardship on the poor girls who graduate, for whom one dress will be almost an impossibility, and three will be out of the question.

In many places school boards have acted to limit the price of graduation dresses; in other places the gowns are made in the domestic science classes. A few schools have adopted the cap and gown idea of the colleges.

It does seem that the high schools are growing to be more and more prohibitive to the poor student, the very one to whom it should be of most service.

Many a boy or girl graduates from college, on a limited income, with much less embarassment than they endure when they get their high school diploma.

Let's not talk about it year after year, but let's act, so that rich and poor may meet on the same common ground as has supported them all through the years of the grades.—*A. M. S.*

ADMINISTRATION NOTES

—Deacon, Ind. At the request of the state education department, the school officials have completed plans for the elimination of the tenth and eleventh grades as part of the school system. The change is part of a state-wide movement which is intended to improve school conditions and to reduce the cost of operation.

—Kansas City, Mo. Supt. George Melcher has recently issued a statement, in which he asserts that the proposal to reduce by one year the time spent in senior high schools and junior college will not disrupt the school system. The present movement is a step toward the elimination of duplication of study in secondary schools and is a test to determine the practicability of shortening the time required to complete the school system.

Under the proposed plan, instead of spending three years in the senior high school and two years in the junior college, as now required of high-school graduates, the experimental group will take special consolidated courses to enable them to complete the same amount of work in four years.

—Chicago, Ill. Nine city banks and three New York investment houses have loaned $20,000,000 to the city schools for meeting the payrolls of school employees. The date set for the payment of the loan is September 30.

—Bristol, Tenn. The school board has adopted a budget, calling for the expenditure of $123,700.

—Binghamton, N. Y. The local schools recently received $423,759 as their share of the state department's apportionment of funds for educational purposes. This amount is exclusive of the $82,465 which will be used for the teachers' retirement fund.

—Rockford, Ill. High money rates in the east and the depressed condition of the bond markets have forced the board of education to authorize the sale of warrants totaling $210,000 at 6 per cent interest instead of the usual 5 per cent. It is the first time in years that the local schools have been forced to pay 6 per cent for money. The local banks have been taking the school and city warrants at 5 per cent, but recently informed the board that they would ask 6 per cent interest.

—Grand Rapids, Mich. A local law firm has ruled that the board of education has no authority to make a loan to the city under the Michigan laws. While there is no specific ruling on the matter, the law specifically states that school funds may not be transferred, and that they must be used for school purposes.

—Macon, Mo. The school board has reduced the tax levy from $1.10 to $1.08 for this year. The decrease has been made possible as a result of a strict economy program and the elimination of a large deficit which had accumulated over a period of years.

—Negro elementary and secondary education in public and private schools has made more progress in the past nine years than in any similar period in the history of the country. According to the U. S. Bureau of Education, a total of 2,218,312 negro pupils were enrolled in public schools in eighteen southern states in 1926. Of this number, 1,055,674 were boys, and 1,162,638 were girls. The average daily attendance was 1,563,975. To instruct these children 47,594 teachers were employed, including 38,942 women and 8,652 men.

In the 425 public high schools for colored pupils, there were 2,566 teachers, and 98,705 pupils were enrolled in these and other schools attended by colored pupils.

Teacher-training institutions for negro students numbered 29, and were located in seventeen southern states and in Pennsylvania.

—The state board of education of Virginia has approved loans totaling $94,369 from the state literary fund for financing the construction of schools in seven counties.

The board has established new qualifications for acting superintendents of schools, providing for graduation from a four-year college course, with fifteen hours of professional training, and two years of experience as a principal or supervisor; or graduation from a college with the degree of B.S. or A.B., and four years' experience as a principal or supervisor.

—County school superintendents of Wisconsin, chosen at the April election and beginning their terms on July 1 serve for four-year terms, according to an opinion of the attorney general given recently to State Supt. John Callahan.

The opinion held that the laws of 1929 extending the term of county superintendents to four years applies to county superintendents elected in the recent election.

—A schoolboy patrol has been organized at McGregor, Iowa, under the auspices of the Iowa automobile association. The patrol consists of thirteen boys, ranging in age from 12 to 16 years, whose duties are to stress safety on the highways, at home, and at play.

—Wetumka, Okla. A number of the rural districts surrounding the city have indicated their desire to be annexed to the city system. The annexation procedure would give a large number of

(Concluded on Page 134)

Wilson

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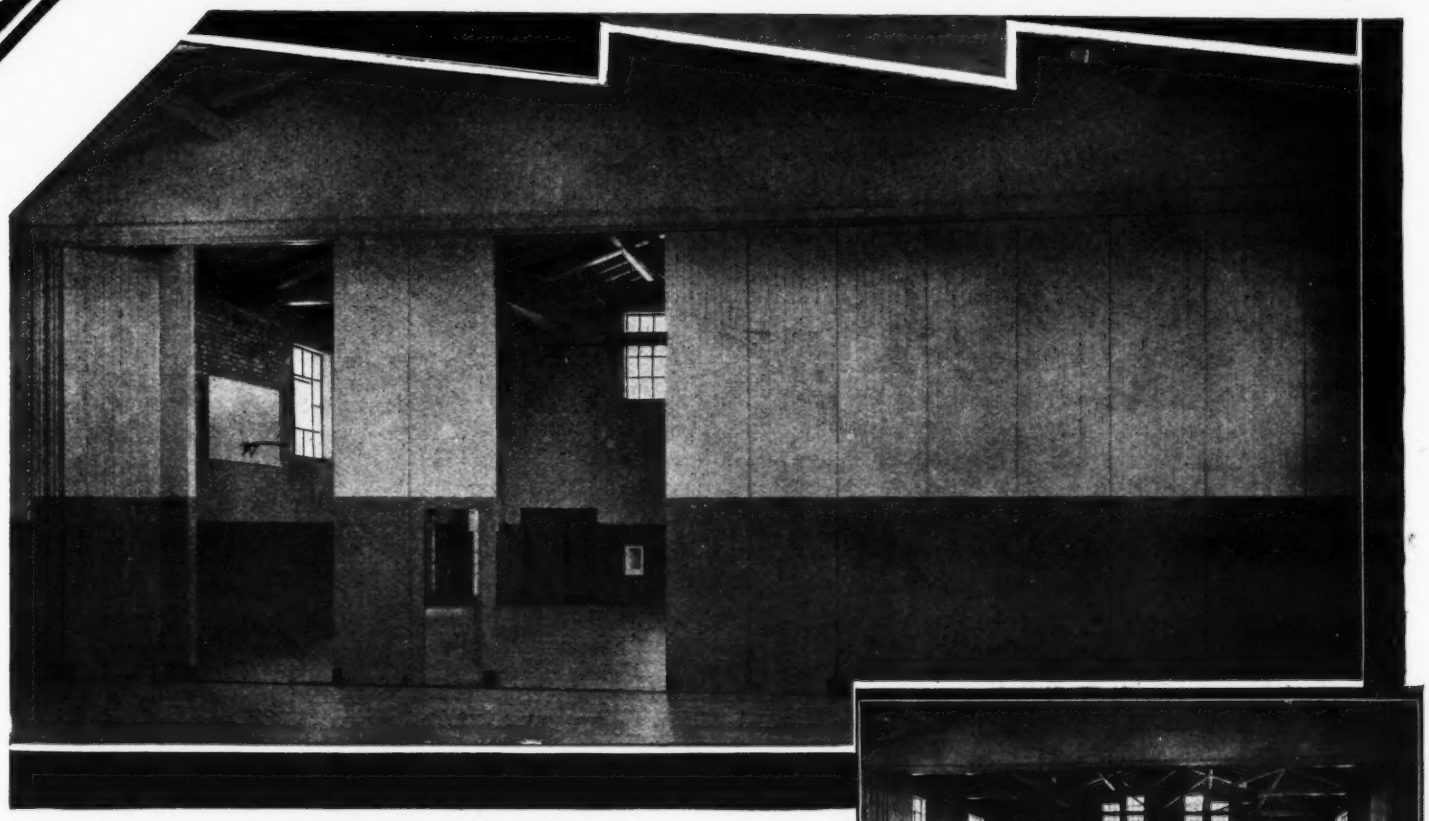
(REG. U. S. PAT. OFF.)



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Other outstanding advantages are as follows:

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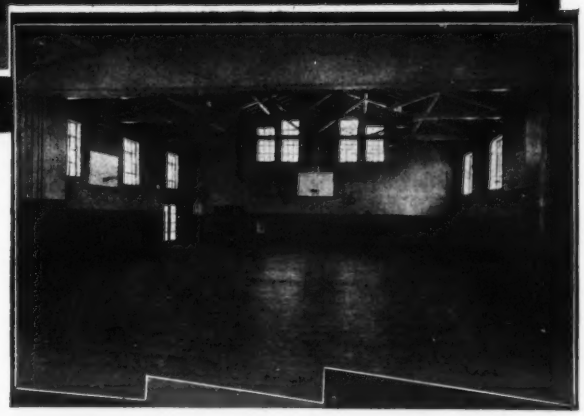
2. Avoid necessity for permanent hand ball and squash courts. Space for such courts can be sectioned off at will and then made part of the main gymnasium when desired.



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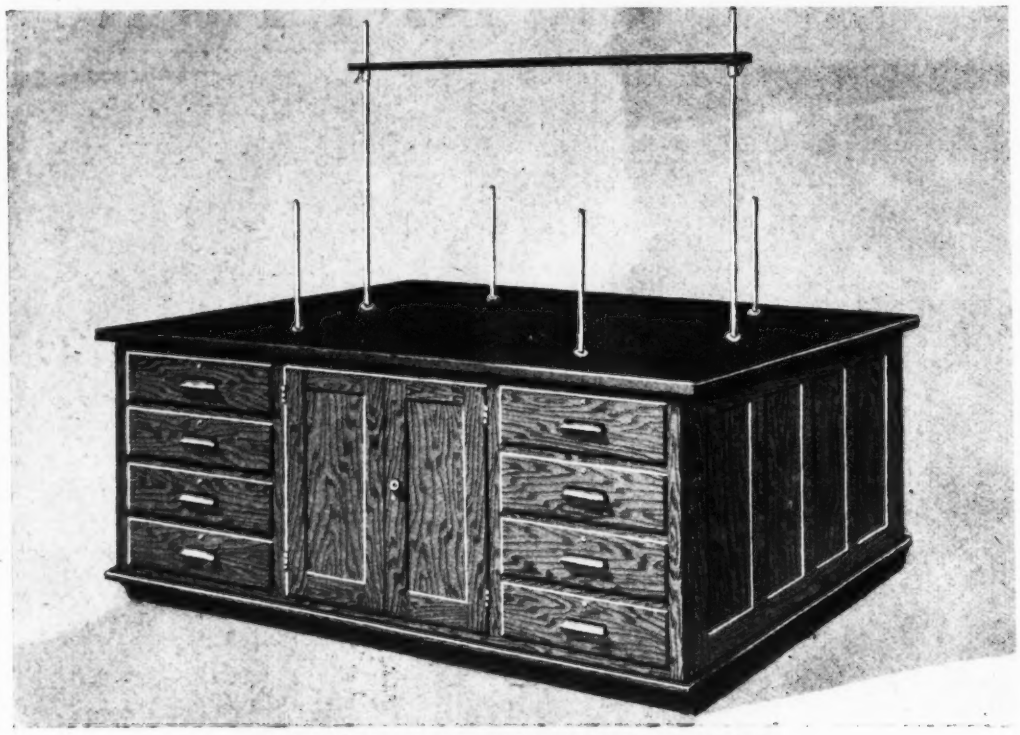

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(Concluded from Page 132)

children the advantages of a graded school and a longer term. The board of education has added only one of the districts up to the present time.

—East Stroudsburg, Pa. Two special rooms have been established for the instruction of backward pupils. A system of semiannual promotions has been introduced in the schools.

—Corry, Pa. A summer playground-and-activity-program will be carried out this summer, with the cooperation of the local parent-teacher association. The summer program will include a check up of entering students for the fall term.

—New York, N. Y. A recent report of the New York City Bureau of Attendance of the Department of Attendance shows that pupils in the day schools did not attend as well this year as they did a year ago.

The report shows that the elementary schools had an attendance of 92.34 for the month of February, as compared with 93.63 in February, 1928, while the junior high schools reported an attendance of 94.35, as compared with 95.44 in February, 1928. This percentage of attendance was the highest of the various types of schools. The high schools had an attendance of 92.20, as compared with 93.64 a year ago, and the trade schools 92.74, as compared with 94.60. The continuation schools, which had the smallest percentage of attendance, 81.97, reported 84.59 in February, 1928.

Of the 544 elementary schools, 285 reported a percentage of 92.34 or better. The Manual Training High School, with 96.47, ranked first among the high schools. In the junior-high-school group, Public School 60, Bronx Borough, was first with a percentage of 97.76. Brooklyn Vocational School, with a percentage of attendance of 94.39, led the trade schools, and the Central Printing Trades School with 95.07 headed the continuation schools.

—Waltham, Mass. Supt. W. H. Slayton, in a report to the school board, has recommended that teachers be required to pass a physical examination. In support of his recommendation, Supt. Slayton pointed out that the matter of the health of regularly employed teachers in the schools is of such major importance that the board should make the qualification commensurate with the need. He believes that teachers should fulfill reasonable health requirements, just as they do scholastic qualifications.

—Sebring, Ohio. The school board has taken steps toward the adoption of a salary schedule for members of the teaching staff. The schedule will provide for a sliding scale based upon years of service.

—Chicago, Ill. One hundred and fifty substitute school teachers, graduates of the Chicago Normal College in the class of 1926, recently held a meeting to protest against a rule of the board which threatens to deprive them of their teaching certificates. The rules require that substitutes who have not been permanently assigned at the end of the third year after graduation must return to the college or some other school of pedagogy for an additional year's work in order to renew their certificates.

Supt. W. J. Bogan endeavored to allay the fears of the complaining teachers, by saying that most of the teachers have been taking extension courses and as a result will have their certificates extended. He estimates that only about 20 of the substitutes with certificates expiring in 1929 have been inactive scholastically since they left the normal college and are thus ineligible for extensions.

—Davenport, Iowa. The school board has amended its rules, requiring that principals of elementary, intermediate, and high schools shall be graduates of a standard college and shall possess a record of successful experience in some supervisory position.

RAISE STANDARDS FOR NEW TEACHERS IN NEW YORK CITY

—The board of education of New York City is planning further changes in the standards for teaching in the elementary schools. The board recently extended the course of study in training schools to four years, and the changes in the standards will be effected when the first four-year class is graduated from the training schools.

A recent survey of the numbers of successful applicants who had qualified under the various alternative requirements for license disclosed the fact that a relatively small number of those seeking to qualify with two years of normal-school training were passing the examinations. Of 158 applicants who had graduated from a two-year normal-school or training-school course, only 34 were successful.

The board of education does not anticipate any shortage of teachers as a result of the raising of the standards, since there is a large waiting list of teachers, and the number of graduates from the three-year course in the training schools will continue to exceed the needs for teachers for almost two years.

DEATH OF MR. E. S. HALLETT

Mr. Edwin S. Hallett, chief engineer for the board of education at St. Louis, Mo., died at his home in that city on March 26, following a ten days' illness of pneumonia.

Mr. Hallett began his career as a teacher and superintendent in Indiana. He became interested in engineering and was for some time employed as a government engineer in Louisville, Ky. Later he became chief engineer for federal buildings in St. Louis, and also superintended the construction of many government buildings in the middle west and southwest sections of the country.

Mr. Hallett came to the board of education in 1917 to take charge of the engineering work of the St. Louis school system. Here he applied his expert knowledge of engineering and built up a national reputation among the heating and ventilating engineers of the country. His method of purifying the air of schoolrooms with ozone, which he introduced into the schools ten years ago, proved successful and saved the board several thousands of dollars in fuel. The idea has now been introduced in all the schools of the city and St. Louis has gained a reputation for fine ventilation methods. He originated a school for custodians and the plan was later adopted by a number of school systems throughout the country with uniformly successful results.

Mr. Hallett was a member of the American Society of Heating and Ventilating Engineers and had contributed numerous technical articles to the association's periodical. He was the author of a number of articles on heating and ventilating problems published in the SCHOOL BOARD JOURNAL.

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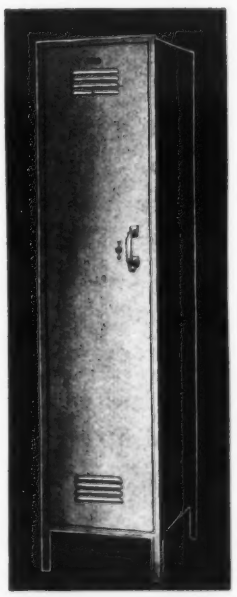
The purchase was made most carefully. Every detail of the construction, performance and durability of the NORWEST line was painstakingly studied and compared. And it is therefore truly gratifying to know that the *order* read "NORWEST"

Our storage engineers will gladly co-operate in designing storage installations that will aid in modernizing *your* school.



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The Imperial Line is complete in four grades from plain oak to the highest grade of quartered oak and mahogany. You are thus assured, not only of the type of equipment which meets your requirements, but of a price that fits in with your financial program.

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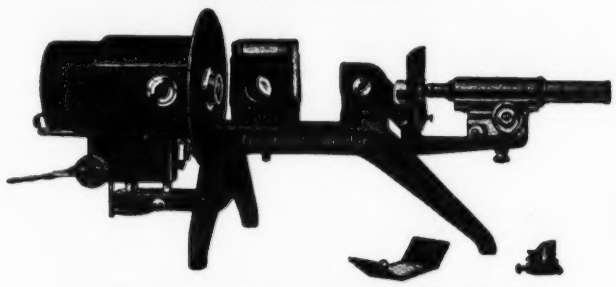
(Projection is possible with microscope arranged in horizontal and vertical position.)



Arranged with microscope in horizontal position.

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The following is an extract of a letter received from a High School Biology Instructor and is only a sample of letters constantly received:

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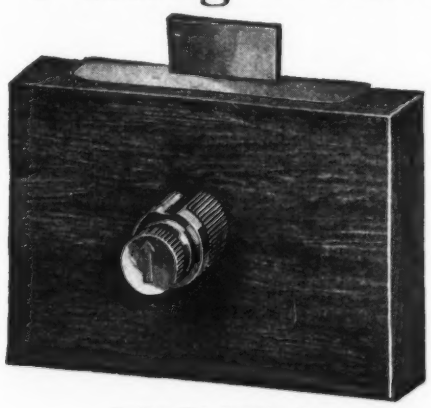

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The Dudley Combination Padlock continues to be the popular standard locker lock of America. Some schools prefer this type in laboratories and shops. Insist on a complete Dudley installation for positive protection and control.

Sample sent to any school executive or instructor for free examination. Send for it today.

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753 TEACHERS IN 46 STATES . . . . .

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"This is just the thing that I want. I have nothing satisfactory." ✣ ✣ ✣ ✣ ✣

"Most teachers have neither time nor the facilities for preparing large amounts of demonstrational material. If materials and suggestions as to the demonstrations are given them in specific form, they will use them in many cases, when, in the absence of these, they would do nothing but text book work." ✣ ✣ ✣

"I am impressed with the complete ground covered and the thoroughness of the plan." ✣ ✣ ✣

"I have received the samples of the Lunt and Haley teacher's pamphlets, also the new advertising recently issued. They all look very good. Putting the units up in separate cabinets or carrying cases would make them especially attractive to our particular conditions."

"I like the course better than anything I have seen for General Science and hope to adopt it." ✣ ✣

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"Just received sample copy. Looks great to me. Will fill large gap in my work just now." ✣ ✣ ✣

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CHICAGO CORRESPONDENCE

For years without number no Chicago school board has been able to sell any school lands. It is not difficult to secure additional land by instituting condemnation proceedings. In fact, the board of education spends about $4,500,000 a year on new school sites. Although some tracts are no longer needed for school purposes, and some tracts apparently never will be needed for school purposes, it has long been impossible to dispose of these tracts. Large sums have been offered for them by business interests and prospective homeowners, but, because of the opposition of certain groups, mainly the Chicago Teachers' Federation, nothing has been done.

In the part of Chicago known as Austin, the school board owns 196 acres of land scattered in different-sized tracts. The location is relatively near the loop business center; transportation by elevated, steam, surface lines, and by boulevards is the very best.

Recently the chairman of the buildings and grounds committee of the board of education, Mr. Theophilus Schmid, introduced a resolution to secure authorization for the sale of this land, none of which is needed for school purposes. The resolution recites the following facts:

1. Four leading west-side business organizations have protested the retention of this idle, unimproved, unproductive school land as a detriment to the progress and development of the west side. It produces no revenue whatever for the schools. (If sold, the buyers would have to pay taxes on it, 40 per cent of which would go into school-board coffers.)

2. The business manager of the school board has reported that it will be necessary for the board to open six streets through the holdings, with a consequent expense of $425,000 for paving, sewers, etc. The school board finances do not justify such an expenditure, and there would be no revenue accruing to the schools from it.

3. It is proposed to invest the proceeds from the sale of these lands in a special fund, the interest of which would be used currently.

4. It is proposed to sell the land directly to businessmen and homeowners in parcels of fifty or one hundred front feet. The plan is to eliminate middlemen and to sell only to individuals in small parcels.

A spokesman for the Chicago Teachers' Federation has argued against the resolution but the Chicago Tribune has vigorously endorsed the plan editorially.

Uel Lampkin, President of State Teachers' College at Maryville, Missouri, and President of the National Education Association, was the guest of honor of the Chicago teachers' league at a dinner at the LaSalle Hotel, on Saturday, April 6. Superintendent William J. Bogan and his board of superintendents were also guests. Miss Florence Deneen, sister of Senator Deneen, is president of the Chicago teachers' league.

The Chicago schools are in a bad way, financially. For several years the annual expenses have exceeded the annual revenues, and 1929 promises to be the year of the big crisis, as even the borrowing power will be exhausted by September. Teachers' and civil service employees' payrolls have been delayed once or twice. The newspapers report that contractors have not been paid for coal, school-building construction, and other things since last November, and some firms are facing bankruptcy as a result.

Recently the general assembly passed a bill permitting the sale of Chicago school anticipation warrants at six per cent instead of five per cent as formerly. The banks hold so much school board paper, however, that they grudgingly loaned enough to pay salaries the rest of the term, from now until the end of June, but refused to permit the use of any of their loan for other purposes, such as payment of contractors, and the purchase of supplies.

The reassessment of property values apparently will dash the hopes of those who expected revenue increases from that method. Certain groups thought that equalization of property assessments would bring in more revenue. The chairman of the state tax commission who ordered the reassessment, has been quoted in the newspapers that he would refuse to certify the reassessment, if it brought in any more revenue than the 1927 assessment. He indicated unwillingness to supply added revenue for the sanitary district, the forest preserve, and threescore other taxing bodies, when it is mainly the schools who need added revenue. He said the schools should use other means of getting their needed revenue.

The board of education has presented a bill to the general assembly to raise the educational-fund tax rate. Even this plan will provide no more immediate revenue in the form of tax collections. However, it would increase the borrowing power, and the school board could then borrow more money from anyone who would lend it.

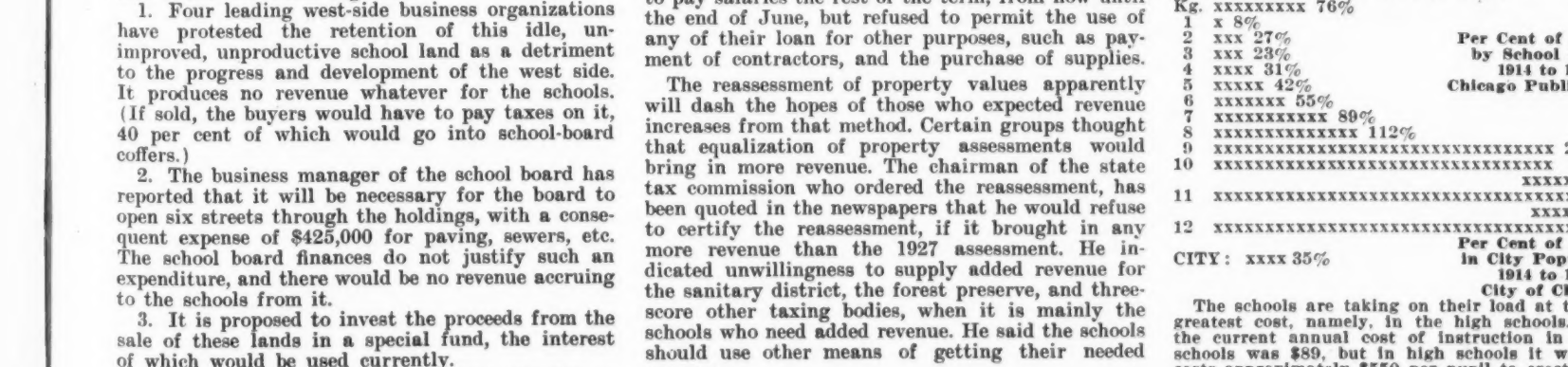
The president of the board of education states, that "Unless this relief is obtained before the legislature adjourns, it will be impossible to reopen the schools for the fall term."

In 1928 the Chicago school board spent $1,402,331.93 for interest on tax anticipation warrants. The Chicago schools have no bonded debt of any kind whatsoever, but a huge floating indebtedness has accumulated. It is expected that $2,000,000 will be required for 1929 because of the delay in payment of taxes due to the reassessment of property valuations.

Out of each dollar of tax money collected in Chicago, the proportion going to each tax spending body is as follows:

City	34 cents
Schools	31 cents
Parks	10 cents
County	9 cents
Sanitary District	8 cents
State	6 cents
Forest Preserves	2 cents
	100 cents

The Chicago public-school membership has increased much faster than the city population. Following is a table giving the percent of increase of each grade, from 1914 to 1929.


Kg. xxxxxxxxx 76%
1 x 8%
2 xxx 27%
3 xxx 23%
4 xxxx 31%
5 xxxxx 42%
6 xxxxxxx 55%
7 xxxxxxxxxxx 89%
8 xxxxxxxxxxxxx 112%
9 xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx 267%
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11 xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxx 337%
12 xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx 304%
CITY: xxxx 35%
Per Cent of Increase by School Grades 1914 to 1929, Chicago Public Schools
Per Cent of Increase in City Popuplation 1914 to 1929, City of Chicago

The schools are taking on their load at the point of greatest cost, namely, in the high schools. Last year the current annual cost of instruction in elementary schools was $89, but in high schools it was $148. It costs approximately $550 per pupil to erect a new elementary school, but about $1100 per pupil for a new high school.

—Mr. J. H. Secrest has been reelected president of the school board at Longview, Wash. Mr. L. C. Peabody took his place at the same time as a new member of the board.

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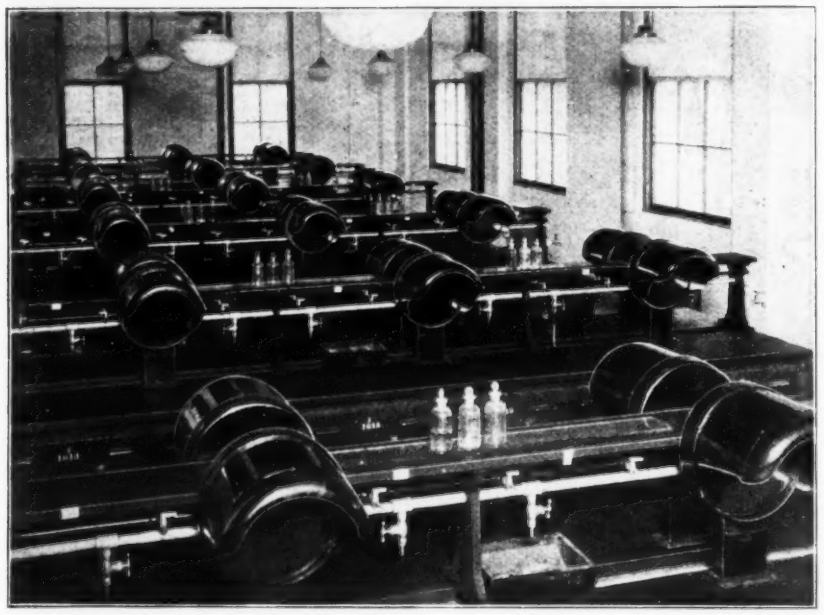
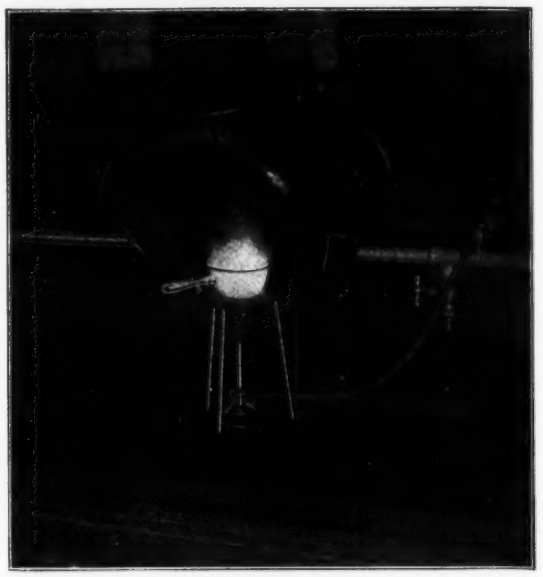
The New Mathews Approved Hood utilizing the high velocity flow principle, makes the escape of fumes impossible. The extension bonnet over the working space prevents loss of fumes due to room air currents.



Quantitative and Organic Laboratories at U. of Wisconsin, Madison, Wis., showing a Peterson installation with the approved Mathews Hood.



Right: No. 1070 The 15" hood in action. Note how extension bonnet collects light gases.

A complete new catalog (No. 16-A) of Laboratory, Library, Domestic Science and Vocational Equipment will be mailed to School Officials upon request.

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WASHINGTON CORRESPONDENCE

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The U. S. Bureau of Education has been charged by Act of Congress with the oversight of Howard University, a national institution for Negroes in Washington, D. C. The bureau's functions will in no way interfere with the management of the institution by its own board of trustees, but the bureau will see that the money appropriated each year by Congress for the institution is expended according to the provisions of the appropriation acts. The bureau's functions will be similar to its functions in the state colleges of agriculture and mechanics art in their use of the Morrell and Nelson funds received each year from the federal government.

School Board Members and Liability in Suits

The members of the board of education of the District are now relieved of personal liabilities in suits for damages growing out of official acts of the board through a proviso in a recent act of Congress.

The proviso reads: "The members of the board of education of the District of Columbia shall not be personally liable in damages for any official action of the said board performed in good faith in which the said members participate, nor shall any member of said board be liable for any costs that may be taxed against them, or the board, on account of any official action as members of the said board; but such costs shall be charged to the District of Columbia and paid as other costs are paid in suits brought against the municipality; nor shall the said board, or any of its members, be required to give any supersedeas bond of security for costs or damages on any appeal whatever."

District of Columbia Teachers May Teach in Night Schools

The public-school teachers of the District engaged in regular school work have been prohibited in the past from teaching in night schools, vacation schools, and Americanization schools, conducted by the Washington public-school system, by a provision in the Federal law which forbids any Government employee to hold two government positions if the two salaries together total $2,000 or more a year.

This provision has been repealed as far as public-school teachers are concerned for those who may be engaged in night school, vacation school, and Americanization school work. Its repeal will be to the advantage of these special schools, as it will permit the employment of regular teachers in the same shops, laboratories, drafting rooms, and art rooms, as they are employed in the daytime. Books and equipment will be better cared for, and less confusion will result from the fact that the teachers will use the same room in the day and evening. This is a minor point in academic work, but an important matter in courses where mechanical equipment is used.

Washington School Board and Higher Education

The board of education is formulating plans for putting into operation the function conferred upon it by Act of Congress, that of issuing licenses to institutions of higher education in the District of Columbia. In the future no colleges or universities may grant degrees in the District of Columbia, unless they hold licenses granted by the board. The board has authority to set up minimum standards which an institution must adopt before a license will be granted it. These requirements are not yet prepared but they will be those generally recognized by the various standardizing agencies.

The purpose of the act is to prevent the existence of "fake" and diploma-selling institutions in the District. Many have existed here because a charter could be obtained by any five persons who wished to incorporate under the provision of the District laws governing the formation of incorporations. They needed no capital, facilities for teaching, or educational qualifications to teach. Many of these socalled colleges have a lucrative business of selling college degrees and diplomas. The president of one who did business in the District for a dozen years at least, was finally convicted of using the U. S. mails for fraudulent purposes and has completed a term in a Federal penitentiary. Others have given courses by correspondence and awarded degrees, without resident work, or any standards recognized by educational organizations or officials.

In the passage of the present act many agencies have taken part. Eight years ago a committee representing the local chamber of commerce, the board of trade, the U. S. Bureau of Education, the American Council of Education, and the well-known long-established colleges and universities of the District, prepared a measure which failed to pass Congress. The one just passed is an outgrowth of this one, and its passage was assisted by the facts developed and made public in the trial and conviction of the person mentioned.

The act passed by Congress has a provision that no college or university will be permitted to use the terms "federal," "national," "United States," or others, which might lead persons to believe that it was in some way a government institution.

New Junior High School

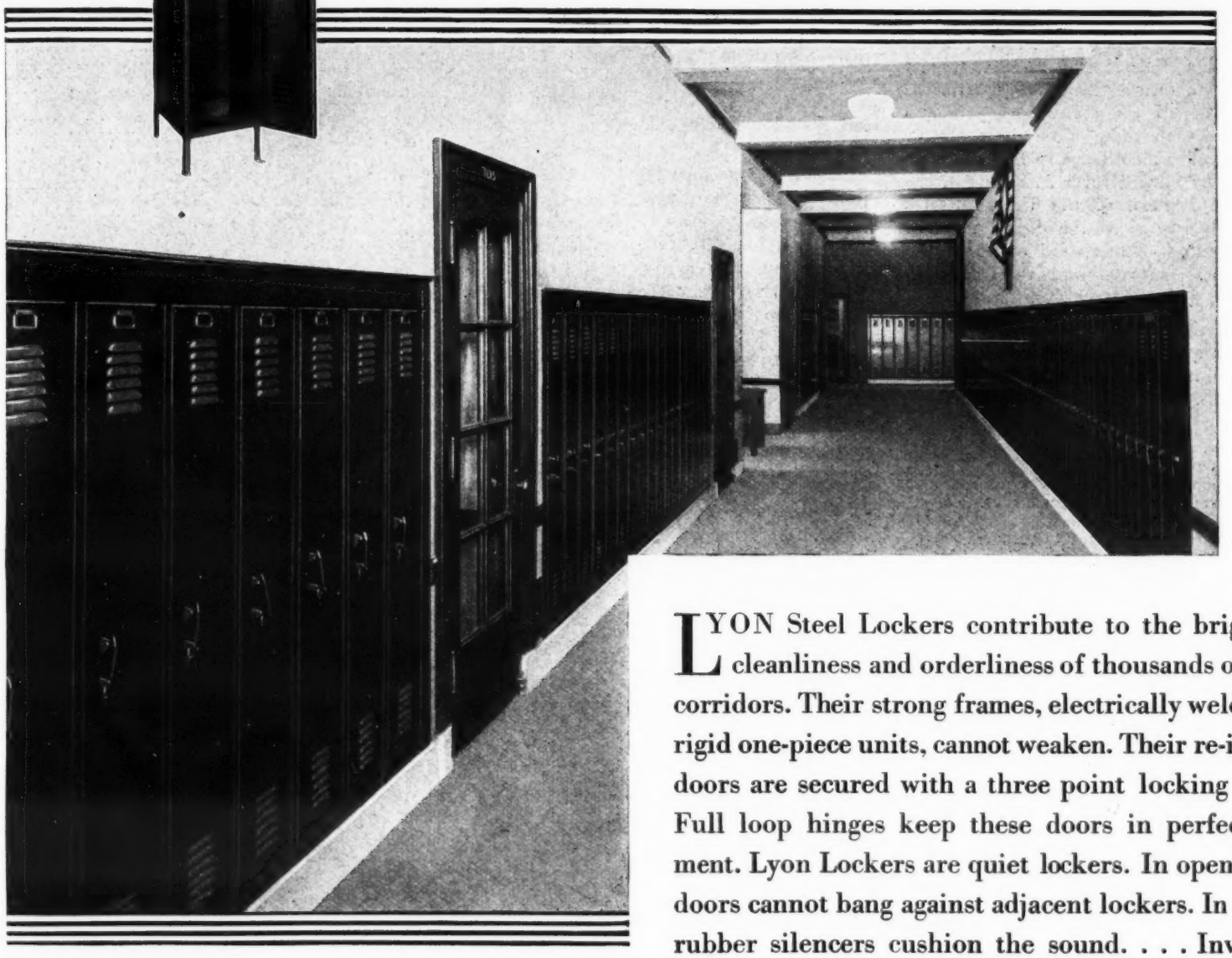
The District of Columbia is to have a new junior high school which will be larger than any of the eight already in use. The building will cost $500,000, not including the land. It will be a model in every way, and will be the largest building project undertaken by the school board of the District since the completion of the McKinley High School.

Washington Normal Schools to Become Teachers' Colleges

The two normal schools of the District of Columbia are to give four-year courses leading to degrees and become "Teachers' Colleges" after July 1, 1933, if the permission to do so granted by Congress is carried out.

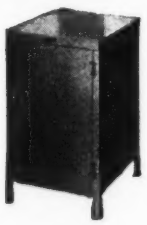
These two institutions, one for white students, the other for colored, two years ago were changed from two-year schools to three-year schools. The first two years of the three-year curriculum will be completed next June, and the first third-year classes will be conducted during the coming year. No students will be graduated this year. This change from a two-year to a three-year curriculum was made because the schools with two-year courses have graduated more students than are required to fill the vacancies in the teaching staff. The authorized change to the four-year course will be made for the same reason.

Lockers for Corridors and Gymnasiums Cabinets for Supplies and Records



LYON Steel Lockers contribute to the brightness, cleanliness and orderliness of thousands of school corridors. Their strong frames, electrically welded into rigid one-piece units, cannot weaken. Their re-inforced doors are secured with a three point locking device. Full loop hinges keep these doors in perfect alignment. Lyon Lockers are quiet lockers. In opening, the doors cannot bang against adjacent lockers. In closing, rubber silencers cushion the sound. . . . Investigate Lyon Lockers on your next requirement. They are made in types, styles and sizes to meet any school requirement. Your needs for Steel Shelving, Cabinets and Folding Chairs also can be supplied by Lyon—a name identifying products of the highest quality. Send for Lyon Locker Catalog. You will be interested in the description and illustrations of the various types of lockers.

DESK-HI



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STEEL STORAGE EQUIPMENT

A Review of the Current Practice in the Lighting of School Buildings in the United States[1]

James E. Ives, Physicist, United States Public Health Service

This article which presents a review of the current practice in the lighting of school buildings in the United States, was prepared at the request of the committee on lighting legislation of the Illuminating Engineering Society.

Apart from an actual survey of the lighting of school buildings all over the United States, which at the present time is not feasible, it was felt that the best information on this subject could be had by obtaining from the departments of education of all the states and principal cities, copies of their codes of requirements for the lighting of schoolrooms. Letters were therefore sent by Surg. Grover A. Kempf of the office of child hygiene of the United States Public Health Service to the departments of education of the 48 states, and of 12 of the principal cities. Answers were received from 39 of the states and 9 of the cities.

The information supplied came in the form of lighting rules and codes, building codes, and information contained in letters. This information has been summarized under the following heads:

Color of walls.
Color of ceilings.
Finish and color of woodwork.
Unilateral or other lighting by windows.
Preferred exposure of windows.
Dimensions of classrooms.
Ratio of window area to floor area.
Type and location of windows:
  Height of sill.
  Height of ceiling.
Character of shades.
Artificial lighting:
  Intensity of illumination on desks recommended or required.
  Watts per square foot.
  Control of lights by switches.
  Exit and emergency lighting.
Inspection and maintenance.
Glare.

The information obtained was as follows:

Color of walls and ceilings. Sixteen recommend a choice between one or more of the following colors: Light buff, light gray, light yellow, or light green, the preference usually being in the order given. Three recommend brown for the dado, or wainscoting, and one, French gray. A dull finish is recommended in three cases, and in four cases it is specifically recommended that the walls shall not be white. In one case a finish is required having an initial coefficient of reflection of from 0.25 to 0.50.

Color of ceiling. Fifteen recommend a choice between one or more of the following colors: Cream, ivory white, or white, the preference usually being in the order given. Four recommend that the ceiling shall be of the same color as the walls, but of a lighter shade. Two recommend flat paint; one a neutral color, and one specifies that the color shall not be white—one requires that the ceilings be finished with a matte or semimatte service having an initial coefficient of reflection of at least 0.70.

Finish and color of woodwork. Only five refer to the finish and color of the woodwork. The individual specifications are as follows: Eggshell gloss, dull finish, same color as walls, natural color with a dull surface; and usually dark but light oak in new schools.

Unilateral or other lighting by windows. Thirty-one specify unilateral lighting. Fourteen of these permit also windows in the rear. In some cases it is specified that windows in the rear must be at least 6 feet above the floor, and in one case it is specified that no more than 50 per cent of the light shall come from the rear. One states that the windows shall be on the long side only. Other individual cases are as follows: If room is more than 23 ft. wide, high windows on right-hand side may be used, at least 6 ft. from the floor. Small windows on other sides than the left, placed high, are permissible. High windows on the right side are permissible if they are at least 7 ft. above the floor. Unilateral, except when the room is more than 24 ft. wide. No skylights unless they are constructed to exclude direct sunlight and excessively bright light from the sky.

Preferred exposure. Ten of the states recommend or require that the windows shall have certain exposures. In five cases an east or west exposure for the windows is preferred. In one case it is required. In another case east is preferred, and west is given as second choice. The three other cases are: East or north; east, northeast, northwest or west; north or southeast; and east or southeast.

Dimensions of classrooms. Twenty of the states and cities have requirements as to the length, breadth, and height of classrooms. There is some agreement as to the height of the ceilings, nine of them specifying that it shall not be less than 12 feet. In four cases a width of room of 23 ft. is specified. Usually the width and length are specified in combination with each other and sometimes the ratio of length to width is given. The individual cases are given in the following table:

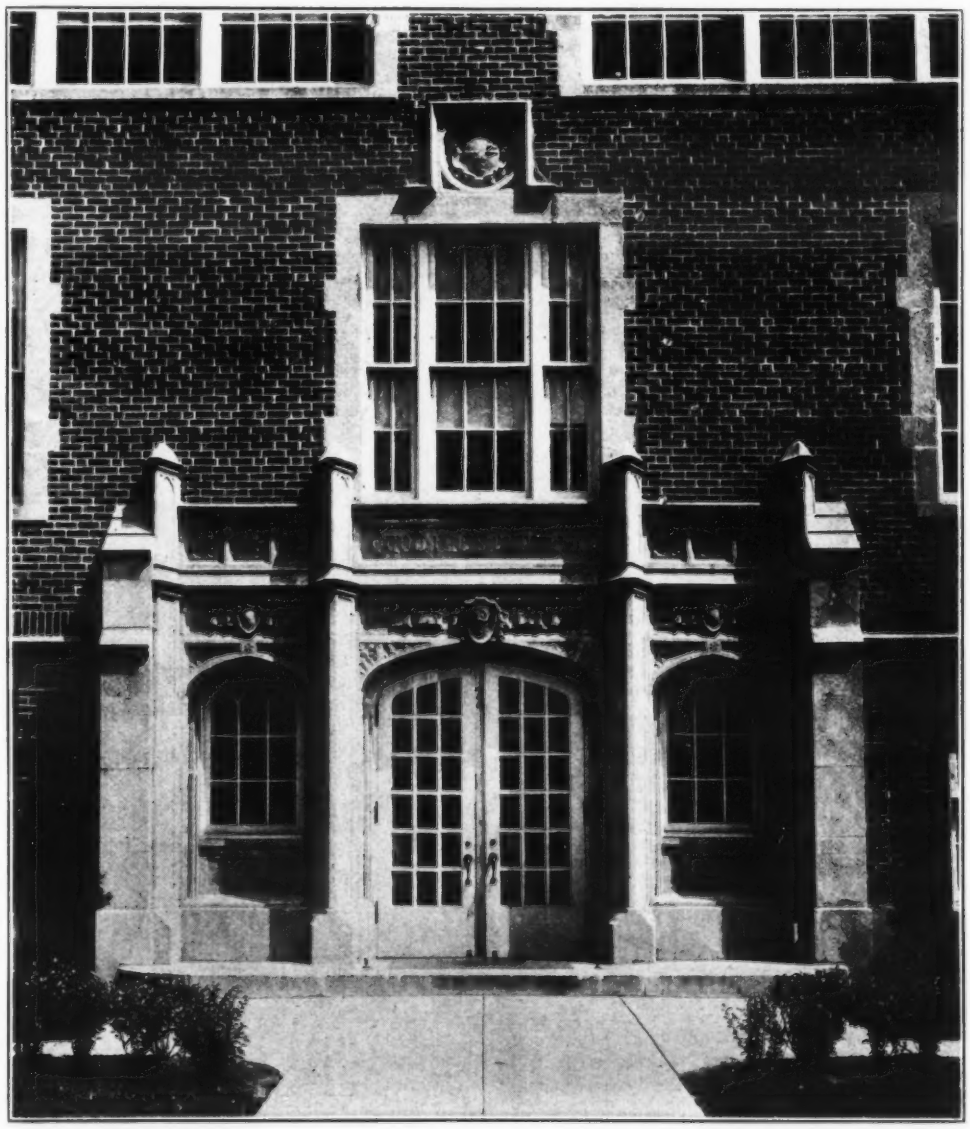
Requirements of 20 States, or Large Cities, as to Dimensions of Classrooms

	Width	Length	Ratio of length to width	Height of ceiling	Ratio of width of room to height of top of window above the floor
(1)	18 feet 8 inches to 21 feet 10 inches	27 feet 4 inches to 31 feet 4 inches	5/4 or 3/2	Not less than 12 feet	Not more than 2⅓.
(2)	Not greater than 24 feet	Not greater than 32 feet		11 to 14 feet	Not more than 2.
(3)	23 feet	31 feet		12 feet	Not more than 2.
(4)					
(5)	23 feet			Not less than 12 feet	
(6)	23 feet	Not greater than 32 feet			
(7)				12 feet	
(8)					
(9)				11 feet 3 inches to 12 feet	
(10)				12 feet	
(11)					
(12)	19 to 22 feet	24 feet 6 inches to 30 feet		Not less than 12 feet	
(13)	21 feet	23 to 27 feet			
(14)				Not less than 12 feet	
(15)	23 or 24 feet	30 feet			
(16)	23 feet	32 feet		Not less than 12 feet	
(17)		30 feet			
(18)	22 feet			Not less than 12 feet	
(19)		28 feet			
(20)	23 feet		4/3	Not less than 12 feet	Top of window shall be at height above floor equal to one half width of room minus 8 inches.
					Not more than 2, except in very wide rooms, when light must be distributed by other means.

Ratio of window area to floor area. The least permissible ratio of window area to floor

(Continued on Page 142)

[1]U. S. Public Health Reports, Dec. 14, 1928.



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William Thomas Towner, Architect, Middletown, Conn.

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Sanitary Pedestal Desk Set

Send for our new School Furniture Catalogue 103-S

HERE is a desk that has been purposely designed to promote classroom cleanliness. Many prominent educators have approved the Heywood-Wakefield Sanitary Pedestal Desk and installed it in their schools because they realize that clean surroundings not only protect the health of a child, but also have a direct bearing on his cultural education. Each unit of this desk is supported by only one heavy gauge steel base. Consequently, a much greater floor area is noticeable to the pupil, encouraging the idea of cleanliness and deterring those minded to litter the floor with scrap paper, etc. The Sanitary Pedestal Desk permits closer spacing and narrower aisles than ordinary desk sets, simplifies sweeping and cleaning because there are no inaccessible corners or crevices on the standards, and lends an attractive, business-like appearance to the classroom. Ask your nearest H-W sales office to demonstrate in detail the advantages of this modern and practical school desk.

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(Continued from Page 140)

area is specified in 32 cases. In 1 case it is specified that the ratio shall not be less than 1 to 4; in 21 cases, not less than 1 to 5; in 6 cases, not less than 1 to 6; and in 1 case, not less than 1 to 7. In one case it is specified that in general the ratio must not be less than 1 to 5, but that when the light is from the north. the ratio must not be less than 1 to 4. In another case it is specified that it must not be less than 1 to 5 if the windows are on the left only, and not less than 1 to 4 if the windows are on the left and rear.

Height of window sill from the floor. This is specified in 19 cases. The least permissible height varies in individual cases from 2 ft. 6 in. to 4 ft. In 3 cases a height of 3 ft. is specified, in 2 cases, 3 ft. 6 in., and in 2 cases, 4 ft. In 1 case a height of not less than 2 ft. 6 in. is specified, but 3 ft. to 3 ft. 6 in. is recommended for grades above the fourth. In another case, not less than 3 ft. 2 in. nor more than 3 ft. 6 in., except in special cases, is specified. In other cases values are given as the least values permissible.

Distance from top of window to ceiling. This distance is mentioned in 21 cases and varies from "a distance as near to the ceiling as possible," to "a distance of 18 in. for a ceiling 14 ft. high." In 5 cases it is stated that it should not be more than 6 in.; in 4 cases not more than 1 in. In 1 case the least distance is made to depend upon the height of the ceiling, 1 in. if the ceiling is from 11 to 12 ft. high, and 18 in. if the ceiling is from 13 to 14 ft. high. In 1 case it is specified that window heads shall not be less than 11 ft. 4 in. above the floor, and that there shall be less than 12 in. from the top of the glass to the ceiling.

Character of window shades. The character of window shades is specified in 17 cases—translucent shades are specified in 12 cases. Double rollers are specified in five cases. The colors recommended are very variable, white, ecru, blue, gray, slate, buff, tan, champagne, neutral, cream, straw, etc. In two cases it is stated that the shade should be adjustable both from the top and bottom of the window. In two cases a choice is given between two shades adjustable at the middle of the window, or a single roller with patent adjustable fixtures. In one case a translucent shade which rolls from the top down and a heavy dark shade (green) which rolls from the bottom up, is recommended. In one case it is stated that the color of the shades must harmonize with the color of the walls.

Intensity of artificial illumination on desks. In only seven cases is the least permissible intensity of the illumination on the desks specified. The values given range from 3 to 8 foot candles, the individual values being 3, 3.41, 4-7, 5, 6, and 5 required and 8 recommended.

Least watts per square foot of floor area. This quantity is specified in only four cases, the values given being 0.9, 1.1 to 1.3, 1.25, and about 1.74.

Control of light by switches. This is specified in four cases, as follows: Switches should be at points of entrance. Switching and controlling apparatus should be installed at entrance to classrooms, hallways, etc.—one switch for lights next to corridor and one for lights next to windows. Switching or controlling apparatus should be so arranged at entrance to each room that a portion of the lights of the room may be turned on.

Exit and emergency lighting. This is specified in four cases, as follows: Corridors, stairways, and egresses shall be suitably lighted and there shall be a suitable number of emergency lights. Emergency lights should be placed at main stairways and exits. Exit lights should be used for halls and gymnasiums. Electric emergency lighting should be supplied from an independent connection extending back to main service entrance, and in every building used at night a red light shall be placed over every emergency exit door, and over every exit door where other doors may cause confusion.

Inspection and maintenance. There were only three references under this head, viz.: Walls must be kept clean. All parts of lighting system should be frequently inspected and properly maintained. All parts of system should be frequently inspected and defective parts replaced or repaired. Windows should be frequently washed, walls and ceilings washed, or redecorated periodically.

Glare. Provisions against glare occur in 18 cases. They deal with the character and position of blackboards, the nature and position of lighting units, and the distance from the front wall of the room to the first window. The most important provisions specified are:

1. Blackboards shall be nonreflecting.
2. Blackboards shall be placed in front (behind the teacher's desk) and upon walls on the right-hand side of the classroom.
3. Lights should be shaded and placed well out of the ordinary range of vision.
4. There should be a distance of from 4 to 8 ft. from the front wall of the room to the first window on the left-hand side of the classroom.

This last important specification is made in nine cases. In one case it is stated that it is desirable that artificial lighting should have the same general direction as natural lighting; that is, from the left and slightly from the rear.

It will be noted that there is a great divergence among the different states and cities of the Union as to their requirements for natural and artificial lighting of schoolrooms. It is evident

(Concluded on Page 144)

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There are certain spots in every school building that are used the hardest. Sonneborn has worked with schools for years to combat this depreciation with the result that seven important protective products have won fame as lasting preservatives for school depreciation. Throughout the country in schools of all grades and kinds, these special school upkeep products are used. We can refer you to schools in your locality where you can see their service and hear what they have accomplished. Remember, Sonneborn always guarantees the action and service of Sonneborn products, and always makes good.

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CEMENT FILLER—For floors where decorative appearance is wanted, as for hallways, basement rooms, apply this material over new or old surfaces. Forms a wear-resisting, smooth, colored top over rough, pitted or soiled floors. Four standard colors. Easy to apply. Labor cost small.

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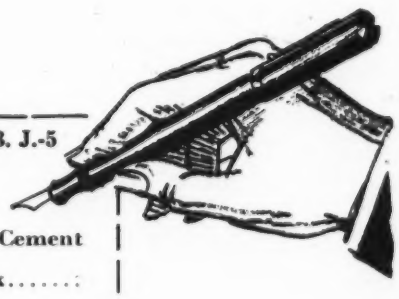

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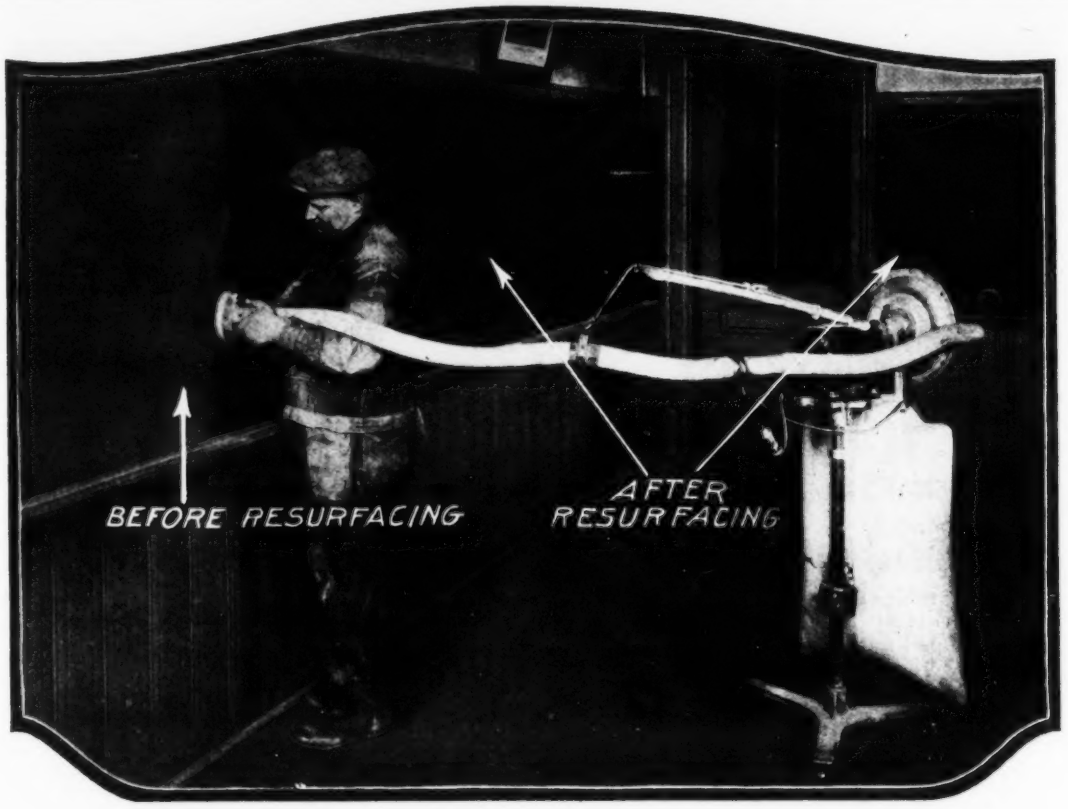

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(Concluded from Page 142)

that these requirements should be standardized as far as possible. Most of these requirements are discussed in the American Standard Code of Lighting School Buildings, prepared and issued by the Illuminating Engineering Society and the American Institute of Architects in 1924, and the requirements of this code might logically be made the requirements of the individual states and cities. Since most of the schools in the United States have no provision for artificial lighting and are only occupied in the daytime, provisions for the proper daylighting of schools are more important at the present time than those for artificial lighting. However, as schools become used more and more in the evening for instructional and social purposes, the artificial lighting of schools will become more and more important.

AMONG BOARDS OF EDUCATION

—Omaha, Nebr. The school board has received a report from the committee which was appointed to make a survey of the school plant. The committee in its report, offered recommendations for a change in the school district boundaries, to provide additional classrooms and to eliminate part-time schedules. The recommendation for closing three schools, which provoked a storm of opposition, will be taken up at a later meeting of the board.

—Iron River, Mich. The local businessmen's association, at a recent meeting, adopted a resolution of protest, charging the board of education with failure to patronize home industries. It appears that the school board had purchased furnishings for the new school from outside concerns and the local businessmen felt that they had been ignored in the distribution of the school business. It is the contention of the local merchants that they can compete with larger companies provided they are allowed only a ten per cent profit.

—Gloucester, Mass. The school board has received a petition from the representatives of the teaching staff, asking for an increase of $200 in teachers' salaries. It was pointed out that the teachers are not receiving adequate compensation to live as becomes their position.

—Malden, Mass. After due consideration, the school board has voted to delay until September, the matter of the reinstatement of a high-school student, who had been suspended after conviction on a charge of rum-running. One of the board members had urged that the student be suspended for all time.

—Alliance, Ohio. The school board has received a check for $206,234 as its share of the early half of the year's taxes, which is a reduction of $12,935 from that of last year. The reduction means that the schools will be compelled to practice rigid economy for the balance of the school year.

—Chicopee, Mass. The school board has decided to wait for an emergency, before taking legal action to compel the return of $51,000 removed from the school budget by the mayor. It was the opinion of the members that there existed no reason for immediate action.

—The thirtieth anniversary of the establishment of the juvenile court in the United States was observed on April 21. The first juvenile court was that in Cook county, Illinois, which was established in 1899 under a state law, which was supported by the local woman's club and the Chicago Bar Association. The movement has grown during the years, until today there are only two states without some law providing for a special court for children.

—Clarendon, Va. The school board of Arlington county has adopted a budget calling for an increase of $17,000 over that of last year. An additional levy of 10 cents for school purposes is proposed.

—Royal Oak, Mich. The school board has approved a bill before the state legislature requiring city and township treasurers to pay in full to boards of education all school taxes when the tax rolls are turned over to the county treasurer for collection. Under the bill, delinquent taxes and penalties will be returned to the city or township.

—Attleboro, Mass. The school board anticipates a deficit of $1,105 in the salary budget due to a budget reduction ordered by the mayor and city council. The city authorities recommended a budget of $292,800, the same as last year, leaving a deficit of $3,325.

—Danielson, Conn. The school board has planned radical reductions in the cost of operating the schools this year, with a view of keeping school costs as low as possible, consistent with the efficient administration of the school system. A number of plans are proposed for effecting economies in school maintenance.

—Lorain, Ohio. The school board has adopted a budget of $850.894 for the school year 1929, which is an increase of more than $68,000 over last year.

—Cameron, Mo. The school board has asked for an increase over the present tax levy of $1.35 in order to keep the school system on the present efficient basis. A study of school costs shows that the revenues have been decreasing each year, while school costs have been kept well within the limits set by the school income. On the basis of the present levy of $1.25 on the 1928 assessed valuation, a total of $34,948 will be received for school purposes next year, which is $4,202 less than that received in 1928-29, and $8,082 less than the amount received in 1927-28.

—Representative Wilson, chairman of the committee on education, has introduced a bill in the Pennsylvania legislature, calling for the appointment of a special commission to study the problem of school finances. The commission would be a continuation of the committee appointed two years ago to study school subsidies. This latter committee will shortly submit a report asking that the basis of school subsidies be changed from population to true valuation, and that proportionately greater awards be given to the poorer districts regardless of population.

—New York, N. Y. The school board has adopted a budget of $135,000,000 for the year 1929-30, which is an increase of $3,500,000 over last year. The board requested $131,700,000 for the current year and received $130,513,000. Of this amount, the city voted $89,316,000 and the state contributed $41,196,500. The largest item in the budget is that for salaries. This year $3,000,000 was voted in salary schedules in lieu of the discarded supermaximum rates.

—East St. Louis, Ill. The school board has asked the voters to approve a proposition to raise the school tax rate from one to two and one half per cent, and the school-building tax rate from one half to seven-eights per cent. The proceeds of the tax increases will be used to meet possible emergencies.

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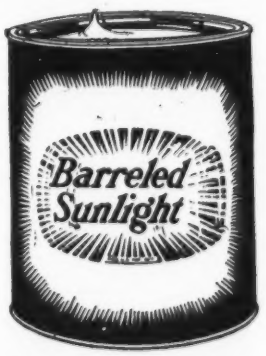

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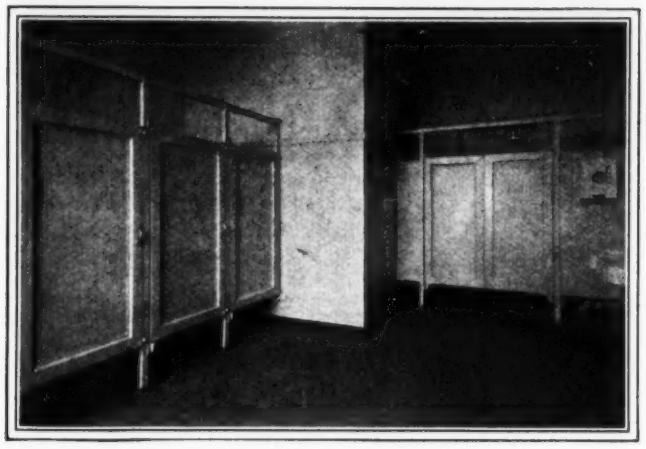

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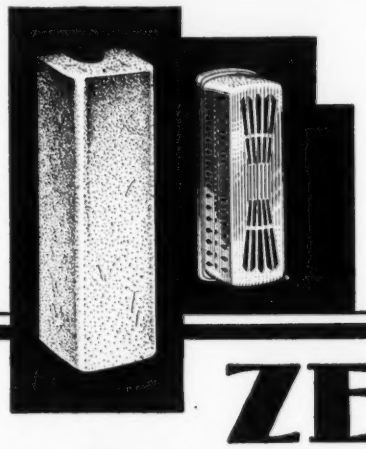

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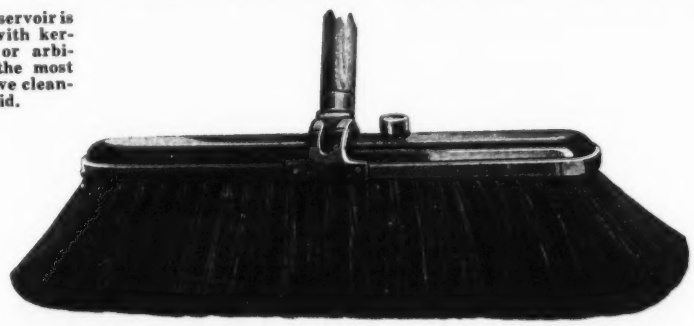

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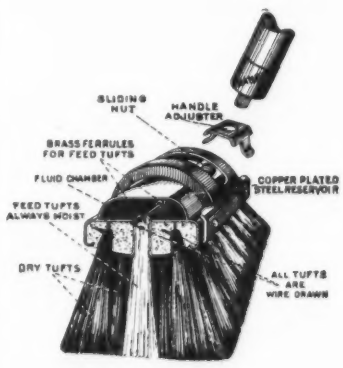

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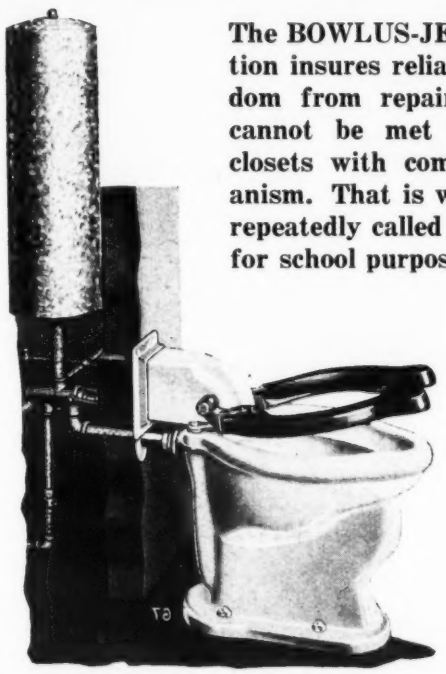

The BOWLUS-JEWEL combination insures reliability and freedom from repair expense that cannot be met by seat-action closets with complicated mechanism. That is why it has been repeatedly called "the best closet for school purposes."

The 13 Bowlus Units installed in the Albany Grade and High School at Albany, Indiana, are giving perfect satisfaction.

Wherever children are involved, never-failing, automatic, seat-action closets that will withstand rough use are desirable. We claim that because of the simplicity of its patented design, the JEWEL FLUSH VALVE will outperform and outlive other valve arrangements. In addition, its principle of a scouring flush by Air and Water under Pressure bears the highest indorsement by leading health authorities.

Write NOW for descriptive literature concerning the famous Jewel Flush Valve

The BOWLUS MANUFACTURING CO.
Springfield · Ohio

INDEX OF SCHOOL-BOND PRICES
(Concluded from Page 70)

reached a new high point of all time in going over 190 in March. The average for the entire month will be very close to this figure. This compares with an average price of a year before of 137. It is this sensational advance which is absorbing the money that would ordinarily go into bond prices. As the table shows, the average price of 60 bonds has fallen fairly consistently over the past twelve months. The result, of course, has been a rise in yield.

Table VI shows that the price of all commodities has remained fairly constant since the beginning of the year. The price of building material continued to advance, the index reaching a new high figure, for recent months, in February; the preliminary figures for later months are slightly higher.

SMALL TOWN ESSAYS
(Concluded from Page 40)

Moralists might make a lot of this story, but I suspect that anyone given to tracts would not have heard it, for he told it to me as a friend. How well it illustrates the strength of habit. It reminds me of the story of Henry Skarr.

Henry Skarr was a section hand during the great fire in the pine forests of western Montana. The disaster is a story by itself, as I found when I dug up the old files of the Daily Missoulian. There was a time when the street lights in Missoula were turned on at noon because the smoke was so thick. Freight trains with loads of homeless men and women were brought in from the west.

Part of the story deals with a heroic telephone operator who sat at her switchboard when the flames threatened to engulf the town. The wild ride of Henry Skarr on the handcar of the local section through the burning forest is a saga. The birth of a boy at the edge of town when Henry Skarr and his passengers reached safety should end this saga in an aura of heroism.

Henry Skarr was a hero. The world witnessed that he could meet fire and death without fear. He was, without doubt, cast for higher things than the humble station of his life permitted. And yet, he was, in quite a different way, as inextricably bound by habit as the schoolmaster who wanted to break with social conventions. For when the great stir-up was over, Henry Skarr reverted to type. His little day of glory was past. He got back to his job at a dollar and a half a day.

THE PITTSBURGH SALARY SCHEDULE: AN APPRAISAL
(Continued from Page 43)

system. But, it is here to stay, whether we like it or not. Some group is going to set the stage. In fairness to themselves teachers had better take the initiative in determining what merit is, and how it is to be recognized. All that taxpayers want is a merit system which is fair to all. Boards of education and their executive officers have no interest foreign to the welfare of children. These are likewise the interests of teachers.

The Executive Officers

The operation of the new schedule falls upon the superintendent of schools and his staff. Upon the personnel director and his assistants will rest the principal burden of administering the merit feature of the schedule. Have these executive officers been appointed to an unfair task? No professional opportunity known to the writer surpasses the one possessed by the associate superintendent in charge of personnel work. He has been adequately provided with resources to carry out the merit feature of the new schedule. He may bring in outside help if he deems it wise. Most wisely the board of education provided that he should have a free rein. He will be hampered by unconscious tradition. A skeptical reserve on the part of certain teachers will slow up his progress; the inertia of old habits of judging merit in teaching will interfere with his conclusions; the newness of the conception and the far-reaching consequences of his acts will unconsciously tend to make him over-cautious. Like all pioneer workers he will probably make some errors, but these can be rectified when discovered. His hands must be upheld at all times, until his work is given a fair trial. If taxpayers, teachers, and other executive officers cooperate with him the associate superintendent in charge of personnel work cannot fail. The principle upon which his work rests is without question. If, on the other hand, social influence, religious affiliations, political bargaining, and sentimental notions are permitted to obstruct his endeavors, the operation of the principle will be delayed so much the longer. He starts out in general under fair conditions; he must be thus continued.

Owing to the size of the city and the limits of the staff of the director of personnel, it may be necessary to enlist the principals of the various buildings in evaluating the merit of teachers. If this be done theirs will be a critical position in this new scheme. Long and pleasant associations have built up valuable friendships between principals and teachers, due often to personal qualities mutually attractive. Furthermore, principals must live and work with their associates daily. Alone the principal is helpless. He can only work through the medium of his teachers. Good will is the basis of such cooperation. The special provision in the new schedule implies strong leadership from the school principals.

The Principal's Part

Success at this point will hinge upon the interpretation of this magnified office. If the principal expects a following because of his official position and authority bestowed, his success is doomed at the start. On the other hand, if he makes himself an indispensable servant to his teachers his office will be truly magnified. He will make his contribution through his fellow teachers. The great spiritual principal of mankind

Ease of Control–Rapid Circulation of Heat Plus Lowered Fuel Costs

With the Dunham Differential Vacuum Heating System

The Dunham Differential Vacuum Heating System was selected for the new Edison School, Rock Island, Ill., because of its vital advantages of ease of control, rapid circulation of heat, and the fuel economy effected by this system's use of Sub-Atmospheric steam at mild radiator temperatures. Surely here are three reasons worth your consideration in planning heating for your school.

The Edison School contains 4617 sq. ft. of direct radiation and 9852 sq. ft. of equivalent direct radiation of Univents. Dual temperature control is used, the room thermostats controlling the direct control valves on each radiator and the air damper in the Univents. Steam is supplied to the mains through Dunham Sub-Atmospheric Pressure Reducing Valves, and to the radiators through up feed risers. Two Dunham Differential Pumps are installed on this system.

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Look for the name DUNHAM

This nameplate identifies a genuine Dunham Thermostatic Radiator Trap.

U. S. Patent No. 1644114. Additional patents in the United States, Canada and foreign countries pending.

Architects: Cervin and Stuhr
Heating Contractor: Ward and McMahon

Edison School, Rock Island, Illinois

said, "Whosoever will be first among you, shall be the servant of all." (Mark 10: 44.)

The history of public education in this country makes clear the public regard for the office of school principal. Often it was held by the only teacher of known ability in the school. The rest were largely new, untrained, or floaters. All hope of progress in instruction and stability of the school rested in the principal. The conditions giving rise to the present status of the principal, however, are past. As rapidly as possible the principal as a supervisor should yield to the freedom and initiative of the teachers. As one educator puts it, "A good supervisor works himself out of his present job." In teaching orders and the older established schools the administrative officers are subordinate in esteem. The teachers of merit are held in higher esteem. They are the creative workers; they are therefore served in order that they may be free from details which interfere with good teaching. Merit in these teachers is judged by their challenging ideas; eager following, and success of their pupils. The new salaries provided for the principals can be only a temporary provision. The board intended well, but in the light of older schools and the tendencies for teachers to be progressively better trained, the principals are placed in a position of expediency.

Conclusion

The new salary schedule of Pittsburgh is unique through its provision for payment on the basis of service rendered. Other boards of education have looked longingly at this idea, but dared not act according to their best judgment. Struggles, clashes, and heartaches are inevitable for the first few years. But, out of the endeavor will emerge that unique satisfaction, which comes only from creative work and intelligent action.

There will be done consciously in Pittsburgh what is, and has always been done, unconsciously everywhere, viz., appraising the work of teachers. Now it is to be done openly, and as fairly as possible to all concerned. Taxpayers are to know what they pay for; teachers are to know the relative worth of their services to the state. This economic feature of public education is but a means, but it goes to the very core of the situation and cuts in all directions. Teachers' salaries and attendant expenses of instruction constitute more than three fourths of all current costs of schools. Public education has been so much desired that it was paid for without knowing its specific value. Now the financial weight has become so pronounced that there is a general unrest in taking results so much for granted. Pittsburgh has not undertaken an isolated stand There are unnamed citizens' committees in all directions who are ready for an audit of the work of the schools. How the work of individual teachers is to be evaluated, no one knows exactly. But, through cooperation criteria will be set up, either scientifically or permissively, which practically amounts to the same thing. No worthy teacher need fear the outcome. However, those who are willing to ignore the great movement for economy—not retrenchment—in education need not be surprised when they reap just what they have sown.

SCHOOL BUSINESS ADMINISTRATION—II

(Continued from Page 47)

Introduction of time-saving devices and conveniences.

Introduction of workmen's time clocks.

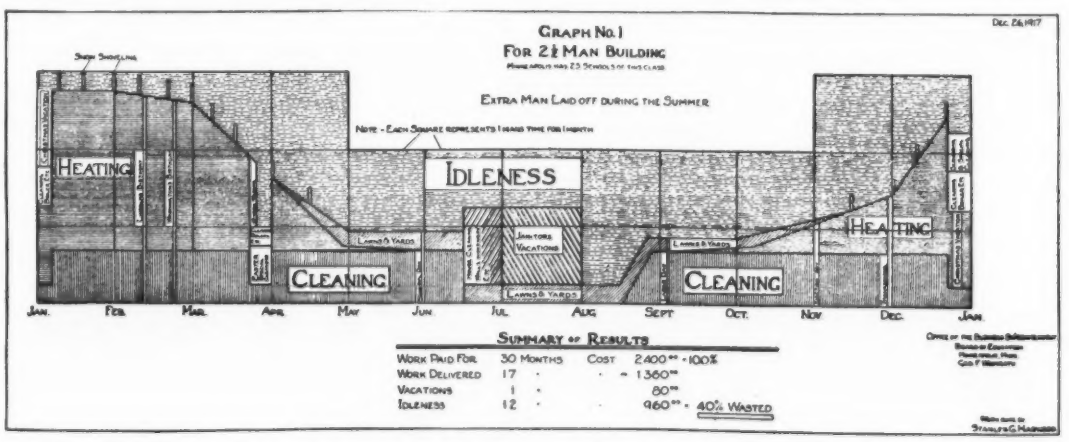
Requirement that employees remain in buildings the entire period of daily employment.

Establishment of a health service and checking of absences.

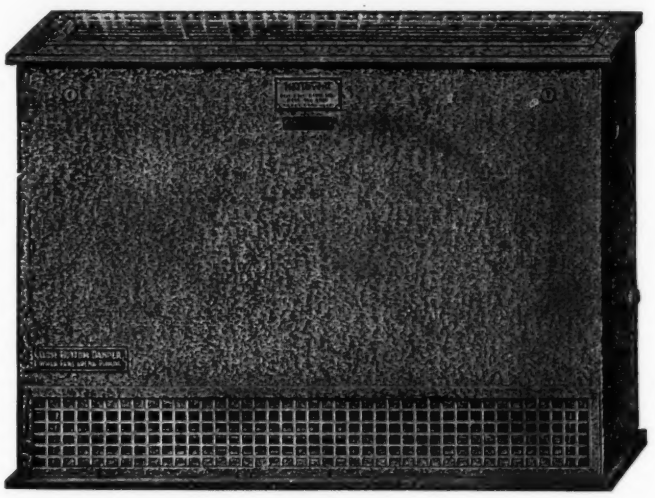
Wage Schedule

Having considered the various factors which affect the salary budget for the janitorial-engineering service of a public-school system, we come definitely to the wage scale. Reduced to the simplest statement, the wages paid should be a good living wage for each employee, sufficient to provide suitable food, clothing, and shelter for himself and family, allowing for a reasonable amount of recreation and amusement to brighten the pathway along which they travel, and with a little cash left over to provide against the proverbial rainy day. It is a social crime to set up a minimum salary schedule on any other basis

(Concluded on Page 50)



DISTRIBUTION OF THE MAN POWER REQUIRED FOR CLEANING AND HEATING A SCHOOL BUILDING



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the "900" Series Buckeye Heatovent

The 900 Series Buckeye Heatovent has been designed to meet the demand for a lower unit, one requiring less aisle space and performing a heating duty superior to anything heretofore accomplished by a unit heater and ventilator. It is designed for automatic control and eliminates the overheating and cold draft difficulties encountered in many other systems. The fundamental principle of the 900 Series Unit is not new. It is simply a better method of applying our education in heating and ventilating to make a more compact unit ---a unit which permits complete control under all temperature conditions. It has capacity to perform its full heating duty in very severe sub-zero weather. It is capable of complete and accurate automatic temperature control in sub-zero weather and will not overheat even in very mild weather. Its heating element is the Buckeye Sectional Copper Tube Radiator which repeated freezing does not harm. It is equipped with time tested, highly efficient Buckeye Multi-blade Fans. It projects but 9½ inches into the aisle, and is only 34 inches high, which will allow installation under practically all windows without obstructing any of the light. It represents a distinct achievement in heating and ventilating units for school rooms, offices, churches, etc.

Write for Bulletin Number 124

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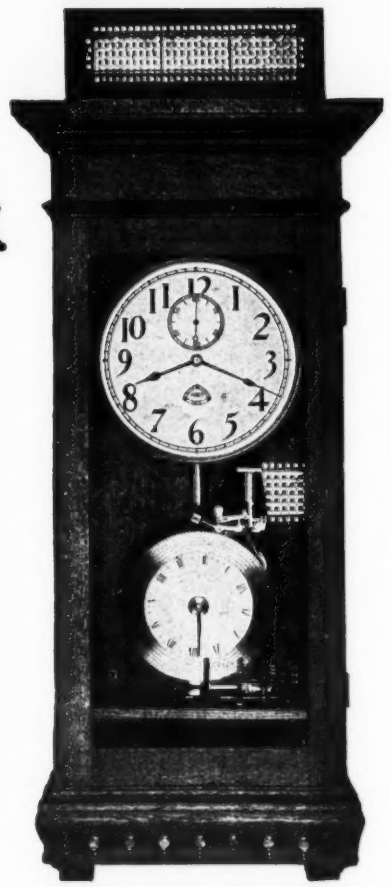

An Automatic System that takes care of the various changes of schedule for the different days of the week - - -

The Landis System provides a line that represents simplicity in construction, accurate mechanical and electrical design, and a system that is long lived and economical in operation.

Allow us to submit specifications covering the individual requirements of each specific installation. Our detailed layout makes it possible to have your equipment installed in a first class manner.

Send us an outline and we will gladly send you a figure on your proposed installation.

LANDIS ENGINEERING & MFG., CO.

Waynesboro, Pennsylvania

(Concluded from Page 148)

simply because poor, hungry, mortal, human beings, overwhelmed by the pitiful needs of those dependent upon them, can be forced to work for a pittance.

The reports of a number of federal, state, and municipal-welfare organizations which have made extensive studies of the cost of living, yield considerable information upon the elements of existence and their cost. These elements and their cost vary in different parts of the United States by reason of the variation in the purchasing power of the dollar and the living conditions as between cold and warm climates. Even after studying a number of these reports the investigator will come to the conclusion that the cost of living is purely a local matter and that he will have to prepare a salary schedule of his own, as the reports based upon the different studies by others give schedules varying in amounts from $950 to $4,730 a year as the sum of money necessary to meet the financial needs of the average family of from two to five persons.

In Minneapolis, Schedule I was prepared from the details of schedules II to VII, inclusive, and led to the adoption of the Minneapolis Basic Salary Schedule for Janitor-Engineers, Schedule VIII.

That some of the allowances in Schedule I are ridiculously low is evident. Nothing was allowed for recreation or vacation. No provision was made for the payment of taxes, or for emergency expenses such as accompany the birth of a child, or for protracted serious illness. The allowance for doctor bills and maintenance of health were practically on the assumption that neither the wage earner nor any of his family would ever be sick.

In the 1927 report of the Research Division of the National Education Association, the median salary paid to janitor-engineers in 46 cities of 100,000 population and over, reporting on 6,529 janitors and engineers, is given as $1,370 for the year 1926, and $1,390 for the year 1927. However, medians mean very little in connection with the preparation of a basis salary schedule, as we are not concerned with a median but with the minimum salary for the lowest paid employee. The higher salaries, being based usually upon merit, ability, and responsibility, have a way of taking care of themselves.

A study by the federal government of 850 families of five persons each, in the City of Washington, D. C., resulted in the establishment of an annual budget of $2,039.49 per family. This included a four-room-house, the munificent sum of $1.60 per month for a family vacation and its recreation and amusement, $80 per year for medical care, and $110 for insurance.

The most confusing element in all of the schedules upon which reports have been made is the viewpoint taken toward the social status of the recipient of the wage. It, therefore, becomes an important consideration to socially locate the public-school janitor-engineer before preparing his wage scale. Dr. Fletcher B. Dresslar says: "The janitor of a modern school building is, next to the principal, perhaps the most important officer in the school." Terman says: "The position of the janitor is a very responsible one; no other individual about the school building, unless it is the principal, has so much influence over conditions which affect the health of the pupils." Another authority says: "A good janitor is harder to replace than a good teacher, and in most cases than a good principal."[3] If these opinions are true, then the wage scale of the janitor-engineer should be on a parity with that of public-school principals.

As a further guide in the study of a minimum wage scale for janitor-engineers, Schedules IX and X are presented. From these it is apparent that public-school janitors and engineers, whose vocation should be classified among the rather valuable occupations, when working on a salary schedule of from $1,200 to $1,500 a year, receive a much smaller wage than is paid to any of the skilled trades working under trade-union-wage scales.

[3]Quotations are taken from Bulletin, 1922, No. 24, page 3, The School Janitor by John Absalom Garber.

Salary Budget

A summation of the foregoing gives the salary budget. This is computed by multiplying the list of duties by the time factors required to produce the quality of work set up as standard and dividing the results by the equivalent of one-man-power. The quotient equals the total man-power required. The total man-power multiplied by the salary schedule equals the annual salary budget which should be provided.

STATE SYSTEMS OF TAXATION FOR PUBLIC SCHOOLS—III. THE CONNECTICUT PLAN

(Continued from Page 66)

As pointed out in an earlier paragraph the total combined proceeds of automobile fees and gasoline taxes are paid to the state highway department and are, therefore, not available for appropriations for schools or any other purposes, except those of the department specified. Included in the miscellaneous receipts, (see Table III, item 15) are $124,714.62 transferred from the income of the (state permanent) school fund and many large items, e. g., nearly a million dollars received for board and care of patients in state hospitals and sanatoria; agricultural-college fees, sales, rents, etc., amounting to $552,-268.73; miscellaneous receipts from the state board of education amounting to $433,232.24. Many of the funds composing the miscellaneous receipts are in part pledged to specific appropriations; some are not, but the data presented in available state reports do not permit any further analysis from this angle.

(Concluded on Page 152)

You will find TICO BOILERS in all of these PROMINENT NEW YORK CITY BUILDINGS

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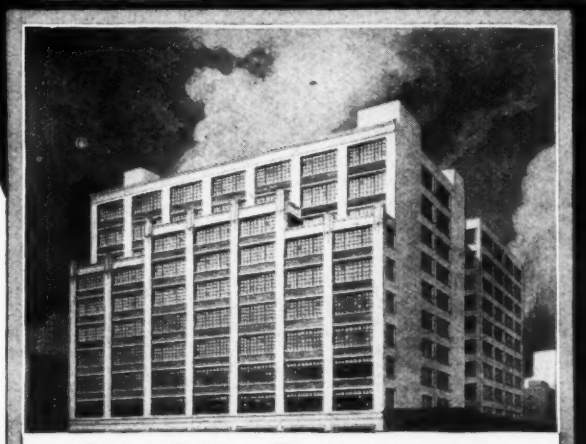

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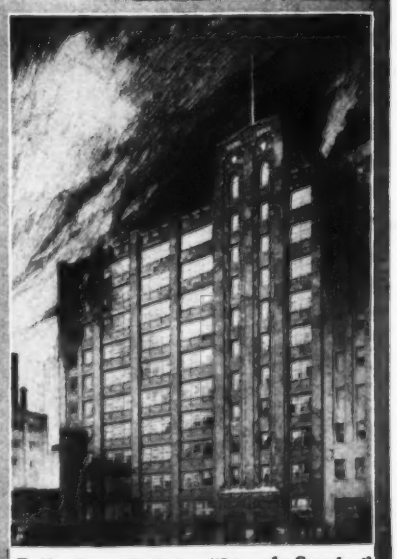

Fuller-Luce Building-"Lincoln Service"
Two T-115 Tico Boilers

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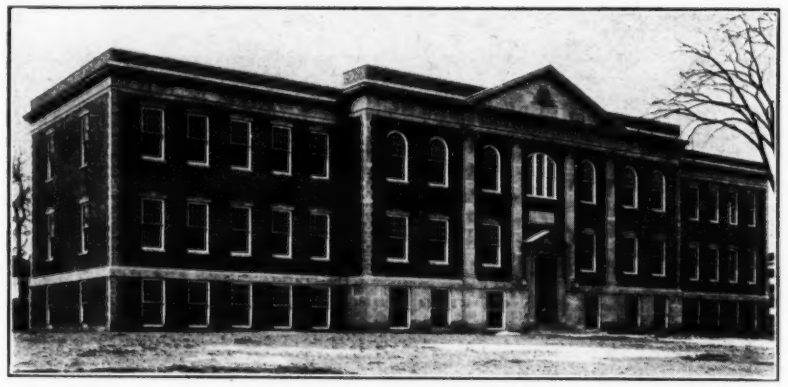
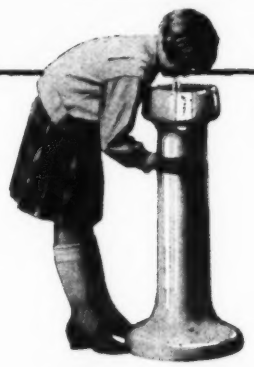
Freedom from servicing



College of Pharmacy, Albany, N. Y.
(Alex. Selkirk, Arch.)

AFTER a Halsey Taylor fountain is installed there is no danger of frequent servicing. There is nothing to get out of order, despite the fact that unusual features of construction make them the paramount fountains for sanitation. Schoolboard officials know that Halsey Taylor Drinking Fountains provide a welcome freedom from any problem that may have been previously encountered in school fountain installations. Our new manual describes and illustrates the complete line.



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Largest Manufacturers of Drinking Fountains Exclusively

AUTOMATIC STREAM CONTROL
Stream is always at practical drinking height, lips need never touch the two-stream projector!
SAFETY FIRST!

(Concluded from Page 150)

These miscellaneous receipts, together with the proceeds of automobile fees and gasoline taxes, constitute no less than 52.74 per cent of the total state receipts, leaving 47.26 per cent as the proportion derived from state taxes and available for all general appropriations, including schools. The most important sources of the total state receipts, i. e., of the general revenue fund, is the corporation tax, which in the year 1925-26 provided nearly one third (30.43%) of this fund; and among corporation taxes the most important is the gross earnings tax and the corporation income tax. Inheritance taxes, and the state general property tax stand next in importance to the corporation tax, the former contributing 8.47 per cent of the total fund and the latter 5.07 per cent. The proceeds of the admissions tax and a tax on unincorporated business are of such negligible importance as to inevitably raise the question whether the levying of such taxes represents a sound and satisfactory policy. In conclusion, then, it may be stated that in the state of Connecticut the chief sources of state school funds are corporation taxes, inheritance taxes, and a state general property tax.

THE MANAGEMENT OF A LARGE SCHOOL HEATING AND VENTILATING PLANT

(Continued from Page 56)

the air to be breathed are two separate and distinct things that are usually classed as one.

42. Air has two important functions in health just as it has in the operation of an automobile engine. We know that in the automobile, air must keep the engine cool. Also we know that the proper amount and quality of air are necessary to make available the power contained in the engine fuel. We also know that we must change our carburetor adjustment for summer and winter operation.

43. But nobody has realized adequately that the same considerations apply to our ventilation problem. In warm weather we must have abundant air flow through our building spaces to remove excess body heat. But if we provide this same air flow in cold weather, there will be great complaint, no matter what the thermometer shows. This item will be considered further under the heading of temperature regulation.

What the Heating Plant Does

44. We can perhaps best get a bird's-eye view of the heating plant itself if we regard it simply as a huge device to transport heat exactly in the same way as an automobile transports goods and persons.

45. The finest car in the world is of little use without good roads, proper fuel, and adequate care and operation by the driver. A heating plant is in exactly the same category.

46. Most purchasers regard a heating plant very much as they do a railroad ticket which constitutes a contract to carry them from one point to another.

47. The purchase of a heating plant no more buys heat transportation than the purchase of an automobile buys transportation of goods and persons in the sense that freight or passenger fares do.

48. Good building construction is to a heating plant just about what good roads are to an automobile.

49. The chimney is to a heating plant just what the carburetor is to an automobile engine.

50. And the fuel is to the heating plant just what gasoline is to the automobile. A little extra ash or a bit of excess moisture in the coal will do exactly to the production of heat what water in the gasoline will do to automobile-engine power.

51. A faulty chimney or breeching, or the improper setting of dampers to control draft, will do exactly to the heating plant what bad carburetor adjustment does to the automobile engine.

Understanding of Plant Operation Needed

52. And finally, a bit of brains mixed with the coal burned, will reduce the total fuel consumed for a given temperature result, just as the same as brains used in driving a car will give more miles per gallon.

53. Burning fuel and making heat are two entirely different things.

54. The St. Louis, Mo., board of education saved $50,000 in fuel in two years as a result of a training school for its firemen. Lincoln, Nebraska, by using university professors to drill its school firemen, cut $8,000 from an annual fuel bill of $40,000. Other school organizations have profited by a practical application of the same understanding.

55. In the operation of a heating plant, the heat must first be manufactured from the fuel, in accordance with the weather demand for it.

56. Next the heat must be transported in accordance with the weather demand for heat.

57. In this connection, it should be remembered that the number of tons of metal in a cold heating plant, make a condition identical with that in starting a cold automobile engine. That is, the load for the first half hour with a cold plant, puts a greater tax on the steam generators, than the coldest winter day will after the plant is warmed up.

58. Consequently, an engineer who understands heating can put on a test of a heating plant in August that will tell him exactly what to expect in January.

59. Finally, the building construction must store enough of the heat manufactured and transported so that the required temperature level above the out-of-door temperature can be maintained.

60. If the building leaks heat like a sieve leaks water, the best heating plant in the world cannot warm it in cold, windy weather.

61. Consideration of this third item automatically fixes attention upon the necessity for careful attention to closing the vent flues of the ventilation plant in cold weather. If this necessity were properly understood by engineers, all vent flues would be eliminated in favor of corridor venting.

Boiler Operation

62. The indication of the boiler steam gauge is the test of the ability of the plant to make steam, i.e., to produce heat in enough quantities.

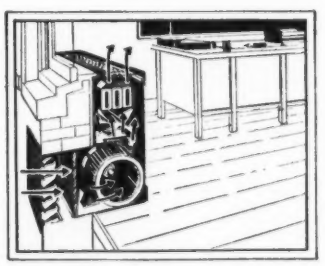
63. If the boilers can be started cold, with the full load, in any weather, even in August, and the entire plant can be made hot in one hour, and can show its ability to carry one to three pounds boiler pressure without forcing the fires, the boiler capacity is ample.

64. If the plant will not perform in this fashion, there is some fault somewhere in the steam generators.

(Continued on Page 154)

Close the window

. . . on noise . . . dust . . . drafts!



EDUCATION and concentration have much in common. Tooting horns, street noises, dust-filled air and uncomfortable drafts do not mix well with lectures and study periods.

Heating and ventilating engineers have given school children their full share of pure air warmed to precise temperatures—without the noise and dust of the street—by means of Unit Heater-Ventilators School authorities appreciate the health and economy to be derived from such apparatus . . . Sturtevant Unit Heater-Ventilators are to be found in schools from coast to coast.

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Many actual photographs of Unit Heater-Ventilators in schools of different sizes—in different localities—are found in our Catalog 361. May we mail you a copy? It will be a pleasure to answer queries on specific heating and ventilating subjects.

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NIEDECKEN
SHOWER STALLS
PATENTED
FOR SCHOOL INSTALLATION
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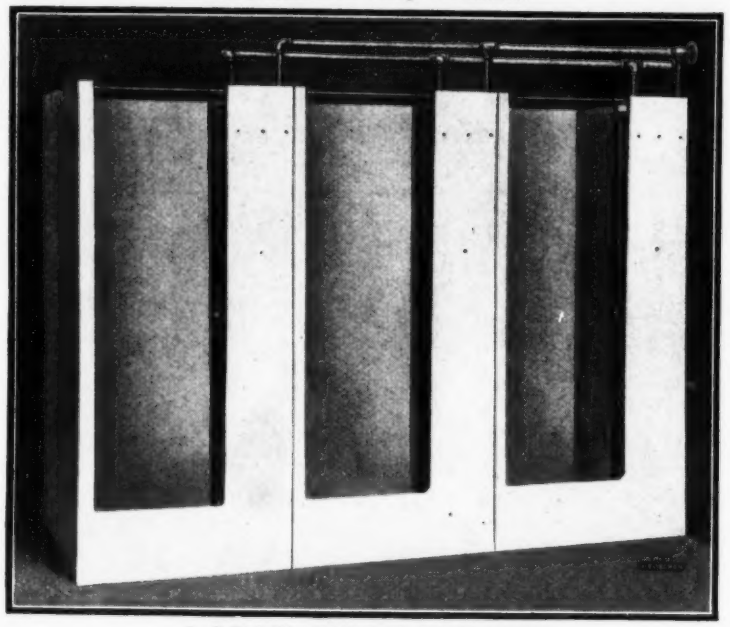

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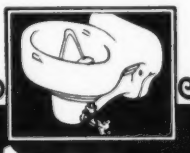

Century SANITARY DRINKING Fountains

(Continued from Page 152)

65. If the boilers make heat which the transportation section of the plant (the steam mains, etc.) will not take, the fault will show as a rise in boiler pressure, that will pop the safety valves.

66. The test of the transportation section of the heating plant is the ability to move the heat away from the boilers as fast as it is made.

67. All tests so far made on the Stamford High School heating plant show that the transportation part of the heating system, is at least equal to the best in the United States, so far as twenty years of constant inspection have shown what this best may be.

Heat-Storage in the Building

68. The test of the ability of a school building to store heat is indicated by the fall of indoor temperature when steam is shut off on a zero day.

69. Fifteen years of operation of a certain plant in Minnesota shows less than 10 degrees temperature drop when steam is shut off from 10 a.m. to 3 p.m. on a zero day. Some school buildings will show twenty degrees drop in temperature in twenty minutes, under like conditions.

70. Indications warrant the expectation of moderate heat losses in the Stamford High School. But the price of fuel in Stamford will warrant the application of metal weather strips to all sash as soon as funds are available.

The Daily Operating Schedule

71. Studies should be made for two successive winters to determine whether it is advantageous to heat the Stamford High School 24 hours daily or only during class hours. The fuel consumption will probably be less for heating only during class hours, but actual operation is necessary to determine the facts.

72. In coldest weather and for the first hour in any weather, the boilers should be run at 3 pounds pressure. In mild weather, after the building has been warmed, the boiler pressure should be dropped to one-half pound or less.

73. Complaints of cold radiators should receive no attention until 3 pounds boiler pressure has been carried for one hour.

74. This plant is designed for 3 pounds boiler pressure. While it has been demonstrated that splendid circulation is obtained at between five and ten inches vacuum, asking for hot radiators on less than 3 pounds pressure is like asking that a fine motor car climb a steep hill over a bad road on high gear.

75. When radiators are reported cold, raise the boiler pressure to 3 pounds for one hour. If the radiators then heat, disregard the complaint. If they do not heat, examine the radiators traps and the diaphragm steam valves.

76. The Coppus blowers should always be operated when full boiler capacity is required.

77. A daily log of boiler-room operation should be run. This should show the fuel burned, the fuel received, and the readings of electric meters and of the water meter. It is hoped that some day a condensation meter will be installed to show the number of pounds of steam used each day or for any given period.

The Vacuum Control

78. The steam circulation is a Webster system with a Nash pump to extract the air from the system, and to return the water of condensation to the boilers.

79. The operation of the pump is controlled by a compound arrangement that permits either the rise of water in the receiver, or the fall of the vacuum in the return line, to start the pump. The lowered water level or the increased vacuum stops the pump.

80. An electric switch on the controller for each of the two duplicate pumps will cut out the vacuum controller and leave only the float control to function.

81. It is recommended that the pump be operated constantly on the vacuum control. The continued tightness of the piping may be ascertained by noting the length of time that a given vacuum will be carried when the plant is cold.

Note: The vacuum carried is no indication of the amount of heat being delivered to the building.

82. It is the state of the boiler fires that determines the amount of heat delivered to the building. With heavy fires it is sometimes possible to deliver more heat with 10 inches vacuum at the pump than it is at other times with 3 pounds pressure on the boilers.

83. All the vacuum pump can do is to exhaust the air from cold radiators and to return the condensed water to the boilers.

84. The boilers must always be fired heavily or lightly according to the weather demand. In mild weather, however, one or more boilers may be cut off after the building is warmed up.

85. Best results will follow working one of the necessary number of boilers hard, rather than to attempt to carry low fires on any number.

86. The vacuum controller should be set to operate at between 3 and 5 inches vacuum.

87. Roughly speaking, 2 inches mercury vacuum is equivalent to 1 pound boiler-gage pressure. So if the vacuum pump maintains 5 inches vacuum, this amount is equivalent to 2½ pounds pressure less than the boiler pressure.

88. And if the boilers are operated at 3 pounds pressure, the total pressure to make the condensation flow through the radiator traps is 5½ pounds. Which is plenty.

89. The operation of the radiator traps should be checked frequently by observing the temperature of the condensate return. To keep a record of boiler performance and operation a recording temperature instrument as well as a recording pressure gage at the vacuum pump is recommended.

Temperature Regulation

90. The Johnson dual-control temperature regulation is part of the heating plant. The dual-control means that when either one of the 3 switches on the panel board in the apparatus room is moved to the point marked *Night*, the room thermostats will operate at 0 degrees, or at the low temperature point. In the position marked *Day*, the thermostats will operate at 70 degrees.

91. Only the classrooms, the auditorium, and the direct radiators in the gymnasium are thermostatically controlled.

92. The hand-controlled radiators should be regularly visited to limit heat from them to weather demand.

93. There is no thermostatic control on the unit

(Continued on Page 157)

"Lower the fire cloth, Master Addison"

Prince Rupert, in 1678, originated a fireplace that gave out four times more heat than the ordinary one. However, in times of heavy rains and high winds, the smoke was driven back into the room as much as before.

"Lower the fire cloth" continued to be a common request even in the days of improved fireplaces when Joseph Addison, the English essayist, went to school. But as soon as the fire cloth was lowered and the smoke and soot ceased to drive into the room, the circulation of heat became checked, students shivered in the cold and breathed stale, devitalized air that brought discomfort and threatened their health.

The modern school has no need for a fire cloth, but proper heating and ventilation will ever be a consideration of first importance. Pure, fresh air and even, well-regulated temperature must be available at all times without the least inconvenience.

The perfect performance—the scientific accuracy and economy of the Universal Heating and Ventilating Units—has resulted in their being installed in a long and imposing list of the nation's schools.

Whether you are considering an installation in a new structure or your present one, you will find these Units simple in design—highly efficient and quiet in operation—absolutely dependable. They deliver a constant supply of fresh, heated air—eliminating all danger of direct drafts.

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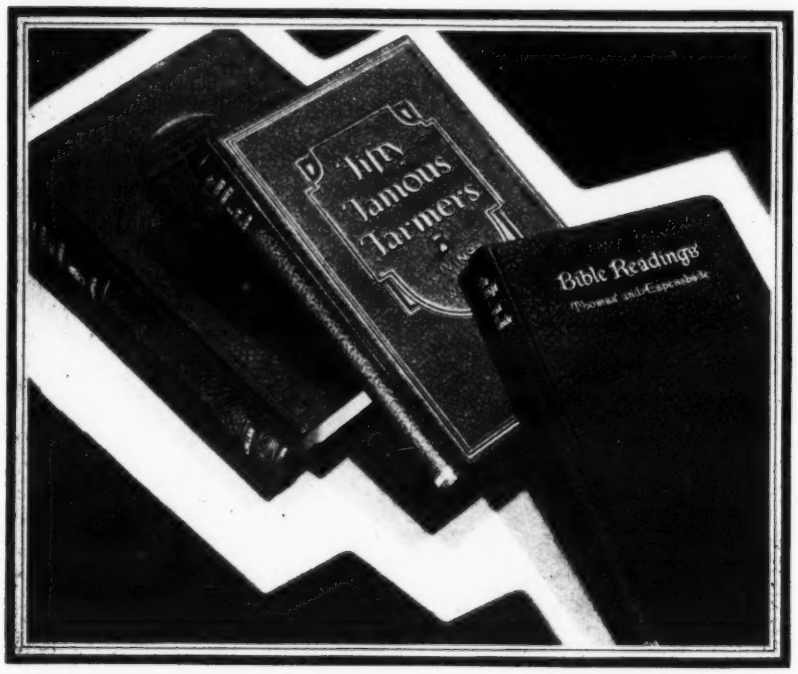

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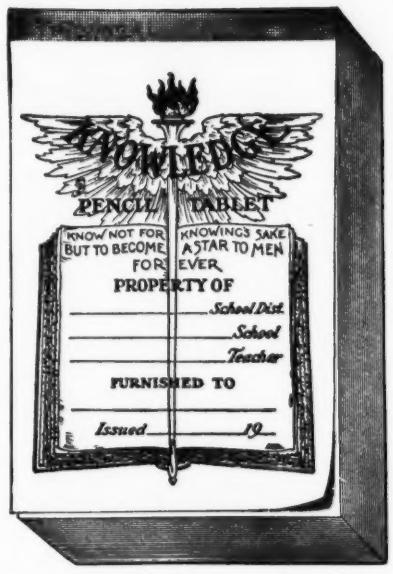

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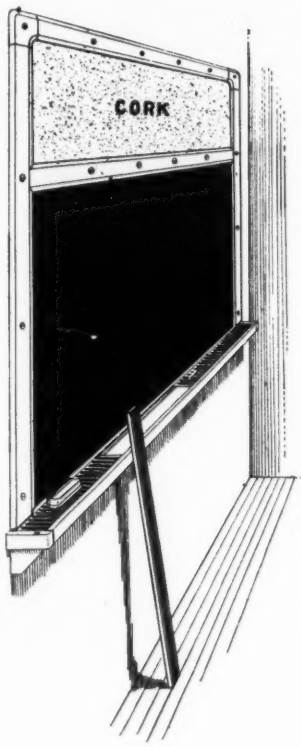

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Our products have been specified the past year for school building programs of magnitude: St. Louis, Missouri; Atlanta, Georgia; and several State Universities. See our exhibit at booth No. 28, National Association of Public School Business Officials, at Columbus, Ohio, in May.

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Gentlemen:

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I have been greatly interested in the fine piece of engineering design that you have given to the builders of this country in the form of the Dudfield Dustless All Metal Crayon Trough and Blackboard Trim.

This Dudfield product is one of the most interesting building details I have seen. It has proven highly satisfactory in the Music Room, the Science Building and the Live Stock Pavilion at the University of Kentucky.

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Very truly yours,
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(Continued from Page 154)

heaters in the gymnasium and cafeteria. This is a serious oversight. Control must be effected by hand valves on the unit-heater steam supplies. These valves must be fitted with chain wheels and extension rods to facilitate this control. The recirculating dampers on all unit heaters must always be open in cold weather when outside air is not required.

94. The temperature-regulation air lines are divided into three circuits; classrooms, auditorium, and gymnasium, so that any one may be operated at lower temperatures to save fuel. By closing the air cocks on any or all of these three circuits, the temperature control is cut off. When the air pressure is exhausted from the lines, all direct radiators will therefore receive steam.

95. There are two supplementary piping systems, one to operate the roof ventilator dampers, the other to operate the diaphragm valves on the univent radiators.

96. The roof damper switch is beneath the panel board in the apparatus room. These dampers should be kept closed in cold weather, when the building is idle, and also in cold, windy weather.

Ventilation and Temperature Control

97. To effectively control temperatures, the control of the atmospheric pressure in the building is necessary. The only way to secure this control is to run the univents with the roof-ventilator damper shut, or else to carefully apply permanent restrictors in the vent from each room.

98. After the building has been studied for one full winter, it may be found necessary to restrict the vent flues in each classroom to prevent back drafts. But metal weather strips should be applied as the first remedy.

99. The classrooms equipped with univents have compound thermostats. One element closes off the direct radiator when the desired room temperature is obtained. The other element operates the mixing dampers in the univent, closing it as the room temperature rises, opening it as the room temperature falls or holding the mixing damper steady in an intermediate position if the room temperature remains constant at the desired level.

100. That means that the direct-radiator operation is positively off, or positively on, while the mixing damper operation is a gradual movement with the variation in room temperature.

101. The mixing-damper motor is a reverse-acting motor. That is, with the absence of air pressure, the motor closes the damper. With air pressure at the thermostat, high temperature closes the mixing damper. Low temperature opens it. When the room temperature is above the set point at which the thermostat is set, the only way to get heat from the univent is to prop the mixing damper open.

102. The univent steam-supply diaphragm valves are operated from switches in the panel boxes near the electric-circuit panels for the univents. One is in the first-floor center corridor and the other in the first-floor front corridor, at the small auditorium.

Classroom Ventilation in Mild Weather

103. The purpose of this control is to enable the univents to deliver unheated outside air in any weather, above say 40 degrees outside, when this is permissible.

104. This not only saves fuel, but it prevents discomfort from overheating in mild weather.

105. And it provides a quality of air in the rooms that is not obtainable otherwise. This control corresponds to letting an automobile coast on down grades.

106. The switches are arranged to correspond to the compass points so that when sunshine on glass puts excess heat into rooms, the univent may deliver unwarmed air. The rooms on each switch must be listed and the list should be pasted on the door of the respective panel box.

107. Careful study must be made of the temperatures to determine when steam may be cut off from the univents and when it must be supplied to them.

108. This condition must be explained to teachers to secure their cooperation as a health measure.

109. The more unheated air that can be brought into the building without discomfort, permitting the direct radiators to supply added warmth beyond that of the animal heat of the occupants, the more certainly will healthful atmospheric conditions be maintained.

110. Through a serious oversight, the specifications have been changed to omit pipe covering upon the risers and branches leading to univent-equipped rooms. This will certainly defeat temperature regulation in mild weather, unless windows are opened. The opening of windows will be the same as using the coal in the school bins to cinder coat an alley. The risers and branches should be covered as soon as funds are available.

The Teacher's Part

111. Finally, the teacher must be made to understand that various individuals require varying amounts of heat for comfort, just as the taste of different individuals requires different seasoning for foods.

112. As a hotel or restaurant must serve its food unseasoned, so that each individual may season it to his own taste, so a school heating plant must be run at the level which best serves the health of the greatest numbers.

113. This means that some teachers will shiver at temperatures which others will find most comfortable.

114. This is most unfortunate. But the only remedy is for those teachers to have a sweater coat available, or otherwise dress for comfort.

115. Many teachers have no comprehension of how their feelings are passed on to pupils. In other words, there is a psychological aspect of ventilation that is most important to consider.

116. An improperly advised teacher may have a whole class in an uproar over nothing. Or she may, by her own self-control, drill her class into a Spartan-like discipline that will do more for them than anything in their books.

Handling Complaints

117. In any event every complaint of underheating or overheating must be rigidly investigated until the chief engineer knows exactly what is occurring.

118. The justifiable complaints of drafts, from hard-working, faithful, earnest teachers have been ignored because the engineers lacked understanding of the relation between cause and effect.

119. The most prolific cause of trouble is back drafts from vent flues, due to leaky windows or other faulty building construction. This means cold

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HAVE WON THEIR REPUTATION FOR HIGHEST QUALITY ON MERIT AND SERVICE. THE RESPONSIBILITY OF SCHOOL BUYERS IS GREAT, BUT WHEN THEY GIVE THEIR SCHOOLS SANFORD'S PRODUCTS, THEY KNOW THEY ARE GETTING THE BEST PRODUCTS ON THE MARKET.

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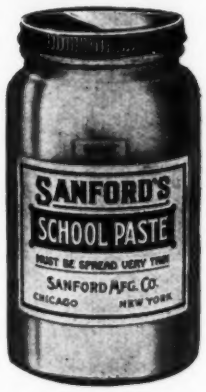

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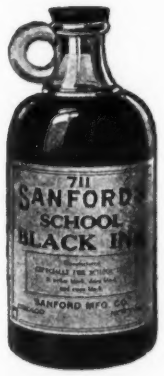

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IS the best paste for the office of the school. It sticks instantly and holds. It remains soft and moist in the package indefinitely. Never stains.

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A VERY excellent School Ink, permanent and most satisfactory for composition book use.

floors and hot ceilings, although the thermostat thermometer shows 70 degrees.

120. It will require some careful study to recognize this condition. Exploring the various levels of a classroom with calibrated thermometers is the best means of discovering the actual facts.

121. This means that the chief engineer should have a dozen glass steam-etched calibrated thermometers and pole stands with three hooks, to take simultaneous readings at the floor, at the breathing zone, and at the ceiling, in several locations in the rooms.

122. Sometimes metal weather strips on the sash and the restricting of the vent flues are the only remedy for serious draft troubles.

123. The next most common cause of trouble is thermostat operation and adjustment. Thermostats are delicate instruments like watches. They require attention now and then. But while they are delicate there is no other effective way to get the results they deliver.

124. It would be distinctly useful to furnish a small blank book to be permanently kept in each room equipped with a thermostat. If each teacher would record in this book the temperatures at regular times, say at 9 a.m., 12 noon, and 3 p.m., daily, a valuable check upon operation would be available.

125. The teacher's comment, if any, should be recorded with the date and time of day. Such a practice would make a valuable log of plant operation.

126. The air-pressure pump should be in service continuously, during nights and idle periods, as long as the boilers are under fire.

127. Further, until the end of the temperature-regulation-maintenance period, thermostats should not be touched. If one sticks, open the air line until the thermostat is repaired. This is the only way to insure final correct adjustment.

Managing the Unit Ventilators

128. Finally, the time of starting and stopping univents must be governed by building requirements.

129. A common complaint in many school organizations is that heat is cut off immediately after class hours, so that teachers who may wish to remain are uncomfortable. True understanding of the purpose of a school building will prevent complaints of this sort.

130. With the devices provided to control the univent steam supply, the roof-ventilator damper, and the motor-generator voltage, this particular heating and ventilating plant offers all the possibilities for harmony that a fine pipe organ does. But the chief engineer must learn the technique of operation, and teach his assistants to produce this harmony.

131. Generally speaking, keep the roof-ventilator dampers closed in cold, windy weather and until the building is warmed up.

132. Keep steam off the univents when the outside temperature is above 40 degrees, after first warming the building thoroughly each morning.

133. Reduce the voltage in cold weather, after the building is warmed up. And increase it for full air delivery in mild weather.

134. When building is first put into use, each fall, run the motor generator at 75 volts for the first week, and then step it up 5 volts to 10 volts per week, until new teachers become accustomed to air-flow sound.

135. Explain to teachers the function of the univent. They will better understand your argument if you make clear that life endures 30 days without food and 3 days without water, but 3 minutes without air ends it. Consequently improved air conditions mean far more than adequate quantities of proper food and pure water.

136. Endeavor to have the teachers explain the functions of the univent to pupils so that they will give it the same regard that they do to drinking fountains or cafeteria equipment.

137. A little effort to promote true understanding will go a long way towards solving the psychological aspect of our ventilation problems.

Ventilation of the Auditorium, etc.

138. In this connection, observe carefully the functioning of the exhaust-fan unit on the third floor and in the auditorium. These should be operated only when these parts of the building are in use. In cold weather the exhaust-fan unit should not be operated.

139. In cold, windy weather, the gymnasium and cafeteria unit heaters may be effectively used with outside air to help build up the building atmospheric pressures, with all ventilator dampers shut. But warmed air will back-flow through these heater intakes if they are left open when fans are idle.

140. The auditorium is ventilated by a central fan that blows warmed air through ceiling inlets and an exhaust fan that draws air out of mushrooms in the floor.

141. The warm air supply is thermostatically controlled by a duct thermostat in the heater room wall above the door from the stage balcony. There is a stop cock in the air supply to this thermostat. When this cock is shut off, the thermostat does not function. This should be utilized to put the full heat of the fan coils into the auditorium for quick heating in cold weather.

142. In the coldest weather the exhaust fan should not be run so that an excess of atmospheric pressure may be built up in the auditorium. In mild weather both fans may be run, with no heat on the fan coils. Some study will be required to determine a schedule for the best operation under various weather conditions.

143. It will be advisable to design a work-order sheet for the night use of auditorium and other parts of the building. This work order should list the various parts of the equipment that should be operated, with (a) the times to start and to stop it, (b) the boiler pressures to be carried, (c) electric switches to be turned on or off, (d) gates or doors to be locked or unlocked, etc. Such a worksheet would carry out the idea of orderly routine for every item of operation.

144. The kitchen exhaust-fan should be run at all times when the kitchen is in service, or domestic science work is being done. The purpose is to keep cooking odors out of the building.

145. There are six Nelson silentvents in various toilet rooms and small exhausters for fume cabinets, etc. The necessary time schedules for starting and stopping these should be worked out.

146. Complete plans and specifications for the plumbing, heating and ventilating, with catalogs

(Concluded on Page 168)

CAVE MEN FIRST WERE OUR ARTISTS

In the long winter evenings early Cave Men doubtless worked on their crude drawings of the animals that they hunted through the day time.

These "Cro-Magnon" artists scratched out designs on the cave walls and filled them in with colors made of earth and oil.

Bits of bone and ivory were also decorated with scratched designs of animals.

Many of those found have a high order of merit and would stand criticism in a modern art exhibition. Such cave dwellings have been found in France, Spain, Italy, China, India, Egypt and Syria.

ONE of the earliest mediums used in writing and drawing were bits of charcoal, soft stones and chalk. We do not know exactly when these prehistoric artists did their first work, but we do know the time of another significant beginning in the history of art. In 1835, in Waltham, Mass., was born -

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Book News and Reviews

East St. Louis Provides Teachers with Outline for Picking Books

Bookmen to be Rated

At the recommendation of the superintendent of schools, the board of education of East St. Louis, Ill., has issued a bulletin to teachers asking their assistance in selecting new textbooks for use in the high school. The method is interesting in that it affords an ample approach to the problem which can be had in any small or medium-size high school. Quite an interesting element in the outline is the request to rate the bookmen who approach the teachers and administrative officers to present their products. The outline is as follows:

In considering textbooks and in preparing to make selections, the committee ruled that no textbook now in use which is meeting the needs of the East St. Louis High School and which is entirely satisfactory from the standpoint of teaching classes, may be displaced. Where new classes have been formed and where present texts are unsatisfactory, it is possible to look forward to a program which will abolish these difficulties.

Departments make arrangements to meet the latter part of April, or the first of May, and not later than May 18, at which time they will give serious consideration to the problems of adoptions. In the meantime, samples are obtained and the whole problem canvassed. The textbook shelf in the library contains many of the newest books in the many subjects. As soon as a committee is ready to meet, the office should be notified and a time limit set upon the representatives of the different publishing houses who will submit their books and the merits of their goods. It is understood that representatives of the book companies will be limited in time and their representation will be in favor of the book which they are pushing, and that no time may be devoted to finding fault with their competitors' goods.

In selecting books, a number of factors should be scientifically considered. Some of these are of primary importance and others are secondary. Some are applicable to one type of book, and some are applicable to other types of books. Particular attention is given to the following facts:

1. Mechanical makeup of the books should be such that their size is approximately 5 in. by 8 in. They should be well bound with durable covering. They should be attractive. The text should be printed on substantial, unglazed paper and in type that is large enough to be easily read. It is important to note that lines that are broken by having insets, pictures, graphs, etc., detract from the usability of the book. Fine print should be reduced to a minimum.

2. *The Weight of Authority*: We should be interested in the author of the book and its date of publication. The author should be an individual or individuals of recognized ability in the field of writing. The publishing house should be recognized insofar as we recognize this axiomatic fact that generally the best publishers get the service of the best authors that have done work in recent times.

3. *Objectives*: In selecting books, the committee must have the objectives of the courses given in the East St. Louis High School clearly in mind. The book is but a tool which is used in achieving specified goals. It is most assuredly not a fetish to be worshiped. Therefore, that book should be selected that will enable the pupil to achieve the aims set down for the course in the best possible way. This is but another way of saying that the book will be the one which best fits the course.

4. *Contents*: The contents of the book should be analyzed. This analysis should be made to determine the quality of the material, its accuracy, and its adherence to the essentials of the curriculum. The contents should be measured precisely in terms of the written course of study.

5. *Pupil Helps*: More attention needs to be given to those parts of the book which are given to enable the pupil to become independent. In selecting a book it is important to note the following points:

1. Table of contents.
2. Index.
3. Sufficient material on the subject matter.
4. Preview and review.
5. Summary.
6. Points covering different phases of the subject.
7. Bibliography.
8. Practical exercises.

6. *Units of Work*: Those books should be selected which fit into the philosophy of this school. That philosophy is based upon the need of the units to be mastered. That book should be selected which will admit of division in the units with the least amount of distributions of sequences and subject matter. The book should be used which can be used in teaching by the unit method.

7. *Illustrations*: Illustrations are more or less essential to clarify the subject matter and to stimulate interest. They should be clear. They should be pertinent. They should be placed in close juxtaposition to the reading material to which they relate. Maps should be accurate, graphs should be pertinent, and all other illustrative material should have a functional value. Teachers, in selecting books, need to pay particular attention to determine that illustrations are not used merely for padding.

8. *Vocabulary*: Many books have failed because the vocabulary used was far in advance of the pupils using the books. If we are to test a text scientifically, the vocabulary should be studied in Thorndike's vocabulary list. It should be carefully studied to see that it is in keeping with the intellectual level of students in the school.

9. *Scientific Investigations*: The book should follow the recommendations of scientific investigations where such have been made. Latin teachers should see that the books are in conformity to the classical investigation. Mathematics teachers should see that their books are in keeping with the report of the committee on mathematics. English teachers should see that their books follow the recommendation of the English committee and all studies in the field of scientific education should be searched and books tested in the light of their findings.

10. *Functional Subject Matter*: No book that does not mold human character and promote the objectives of public education should be considered at all. The subject matter should be organized psychologically to meet the needs of the adolescent youth. It should be written so as to challenge their attention and couched in terms that will stimulate essential acceptable actions on their part. Books should modify behavior for good. If the book does not do this, it is not worthy of place on our list.

Procedure: Chairmen of departments will call their departments together to discuss the book question. This discussion should be in the nature of the following:

1. The name of the book now in use with the date of its introduction.
2. Courses now offered where it is deemed advisable to change texts.
3. Suitable afternoons or Saturday mornings when the committee would like to meet representatives of book companies.
4. Orders for sample books that members of the committee would like to examine.
5. Assignment of books of different members of the committee to be secured.
6. Submit detailed report of this meeting the 15th so that the office can make plans for your meetings and needs.

Scoring Textbooks: Those who are looking over books for use should make out a score card as follows: Every book examined will be scored on the ten points mentioned above. The book will be rated on each of these ten points with a score ranging from zero which represents total inadequacy to ten which represents a perfect score in the element being considered. When the book is completely scored, it will be rated somewhere between zero and one hundred. These rating scores, signed by the person doing the rating, should be sent to the office at the time of the recommendation for textbook adoption. These ratings will constitute the first factor affecting the decision.

The second factor to be considered will be the vote of the department.

When these two factors are considered by the committee, that book that rates the highest will be officially declared the adopted book for the school.

Rating Book Company Representatives: In order to create a better understanding and degree of cooperation between the school and the representatives of book companies, the teachers will also be asked to rate the representatives who present their books for consideration on the following points:

1. Accuracy.
2. Consideration on the following points:
3. Thoroughness of knowledge of texts presented.
4. Ability to present salient features briefly and consistently.
5. Accuracy of presentation.
6. Ability to do business within time limit set.
7. Absence of criticism of competitive texts.

MR. KEENER BECOMES EDITOR FOR LAIDLAW BROTHERS

Mr. Edward E. Keener, formerly director of research in the Chicago public schools, on April 1, assumed the work of editor in the educational department of Laidlaw Brothers, Chicago and New York.

Mr. Keener is a native of Georgia and received his common-school education in the schools of that state. He attended Piedmont College at Demorest, Ga., and later completed graduate courses at the George Peabody College for Teachers and at the University of Chicago.

EDWARD E. KEENER
Editor, Laidlaw Brothers, Chicago, Ill.

He began his educational career as a teacher in the village and small city schools of the South, and as principal in the city high schools. He served two years as director of research at Richmond, Ind., and then came to Chicago, where he took over the duties of director of research during the administrations of Superintendent Mortenson and Superintendent McAndrew.

Mr. Keener is the author of a number of professional papers published in the educational periodicals and is editor of the Fourth Yearbook of the Chicago Principals' Club.

BOOK REVIEWS

The Supervision of Secondary Subjects

Edited by Willis L. Uhl. Cloth, 673 pages. Price, $2.40. D. Appleton and Company, New York, N. Y.

This latest addition to the Appleton Supervision and Teaching Series is decidedly worth-while. The editor and fourteen contributing specialists have covered thoroughly the field of supervision of secondary-school subjects. The contributors have not been content to remain in the realm of theory but have given practical suggestions for meeting genuine situations in the high-school classroom. To the dis-

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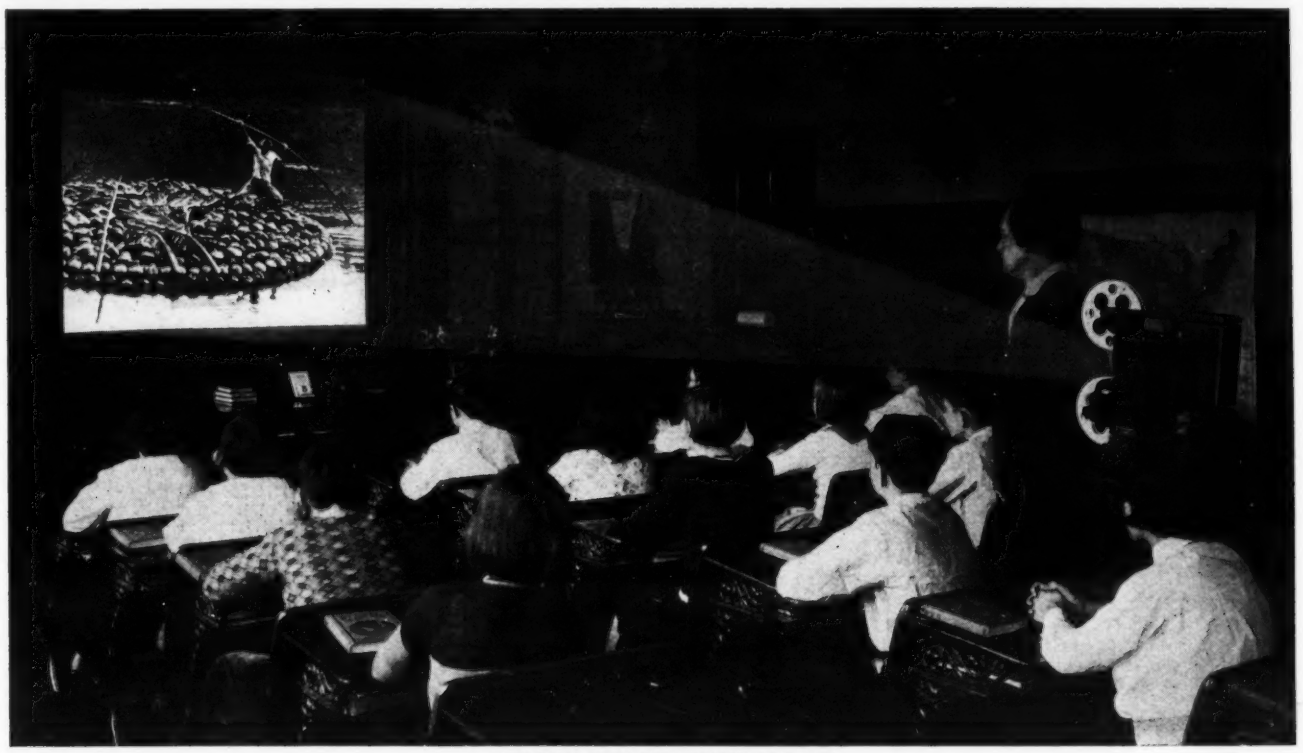

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(Continued from Page 160)

cussions of each subject are added excellent bibliographies, a discussion of the newer techniques in the particular field, the use of tests and measurements, and the like.

This volume will be of inestimable assistance to principals, supervisors, and high-school teachers. The names of the contributors are a sufficient guarantee of scholarship combined with practicality. There are Leonard in English, Hill in social studies, Cole in modern languages, Mason D. Gray in Latin, Clark in mathematics, Pieper in science, Dodge and Henderson in home economics, Gordon and Bradish in music and art, Perrin in health education, and, last but not least, Logasa on the supervision of high-school library service.

An introductory and concluding chapter by Doctor Uhl, on supervision in the high school in general, add not a little to the merit of this book.

Health and Physical Education for Elementary Schools

Alonzo F. Myers and Ossian C. Bird. Cloth, 342 pages, illustrated. Price, $1.50. Doubleday, Doran and Company, Inc., Garden City, N. Y.

This thoroughly practical book presents a modern program of health and physical education for elementary schools. There are excellent chapters on recent tendencies in the field, on mental hygiene, on the correction of physical defects, on the teaching of health habits, first aid, and the like. The most useful part of the book, from the standpoint of the teachers in service, are chapters XIV to XXII that deal in an eminently practical way with various types of activities suitable for all the grades from first to sixth inclusive. Even for those who are not teaching in the elementary school the descriptions of the various games suitable for children make fascinating reading. The book should be of great utility to all elementary teachers, as well as to those preparing for elementary teaching.

Problems in Classroom Method

By Douglas Waples. Cloth, 609 pages. Published by The Macmillan Co., New York City.

The purpose of this book, which is primarily intended for supervisors and teachers in service, is to organize the data with reference to teaching problems. In Part I about forty case problems are given, together with the solutions reached by teachers in service. The critical evaluation of the solutions will aid other teachers in working out solutions for similar problems.

Part II contains a classified list of over four hundred typical difficulties confronting teachers of any high-school subject. There are suggested solutions for these difficulties that have been obtained from professional literature, from teachers in service, and from teachers in training. The method throughout is, of course, that of case analysis and it labors from the limitations inherent in such a technique. Nevertheless, the present volume is of great practical value and the author deserves credit for getting away from vague theorizing down to concrete reality. It is a book that can be commended not only to all engaged in the supervision of high-school instruction, but also to teachers and administrators generally.

Silent and Oral Reading

By Clarence R. Stone. Cloth, 319 pages. Price, $2. The Houghton Mifflin Co., Boston, Mass.

This is a new and enlarged edition of the earlier book by the same author which was a noteworthy contribution to the literature on reading. The present volume takes due account of the great number of monographs, magazines, and yearbook articles that have been published since that date. Due attention is paid to the marked advance that has been made in the development of the materials and methods in silent reading. It is a volume that elementary-school principals and supervisory-school officers simply cannot afford to overlook. It can well be recommended also to students in normal schools and teachers' colleges, as well as to teachers in service. The author, while providing a thoroughly scientific study of the field of silent and oral reading, has avoided technicalities and unnecessary statistical details.

Commercial Teaching Problems

By Paul S. Lomax. Cloth, 200 pages. Price, $1.25. Published by Prentice-Hall, Inc., New York City.

So very few books on methods deal with the commercial subject that the present volume should receive a hearty welcome. The author has attempted to combine both the theory of commercial education with the practice. The combination is not altogether happy.Nevertheless, the practical side is well set forth. It is a book that should be read by commercial teachers in high schools, in normal schools, and university schools of business.

A Self-Rating Scale for Supervisors, Supervisory-Principals, and Helping Teachers

By Edwin J. Brown. Paper. Price, 25 cents. Bruce, Milwaukee.

The scale offers a simple and practical method for a periodical self-check of supervisors, supervisory-principals, and teachers. The scale consists of two parts, personal and social qualities divided into ten divisions, and methods and principles divided into nine divisions. The first part covers everything of a personal nature from habits of dress and cleanliness to personal and professional ideals. The second section covers rather completely the field of supervision, including the procedure and aim of the work, recognition of efficient work, and promotion of good school management. The scale has been tested with excellent results.

A manual of directions accompanies the scale, which gives complete information as to the purpose of the test, scoring, and interpretation of the scores.

Body Mechanics and Health

By Leah C. Thomas, Cloth, 210 pages. Price, $1.50. Houghton Mifflin Co., Boston, Mass.

Correct posture as an outcome of physical education is more widely accepted from year to year. This fact makes a book on the subject of teaching correct posture of correspondingly greater interest to teachers. The present book which is an enlarged edition of a successful work first published in 1922, emphasized exercises for teaching and posture habits. Both the lessons and devices for teaching are well adapted to average school situations, and will appeal to grade teachers quite as much as to specialists.

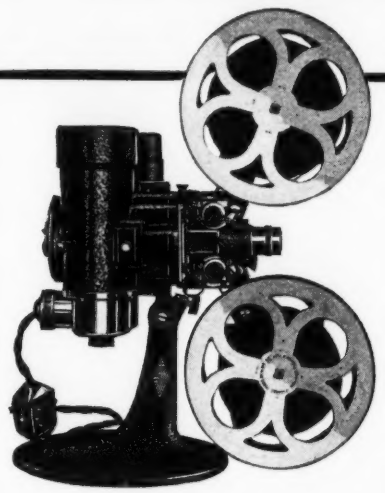
Words

Second revised edition. By Rupert P. SoRelle and Charles W. Kitt. Cloth, 192 pages. Price, $0.44. The Gregg Publishing Co., New York City.

Although remarkable progress has been made in the pedagogy of business, it has been difficult to keep abreast with the business practice and customs. The numerous scientific discoveries and inventions bring with them a host of technical terms which must take their place in one's everday vocabulary.

The authors of "Words" have attempted to keep before the student of business an accurate picture of a cross section of the language which represents the foundation of business expression. The present text is a revision of a former edition which appeared in 1903, and its content reflects the enriched vocabulary of the present-day business man, and the organization of subject matter in accordance with the latest pedagogic findings.

(Continued on Page 165)



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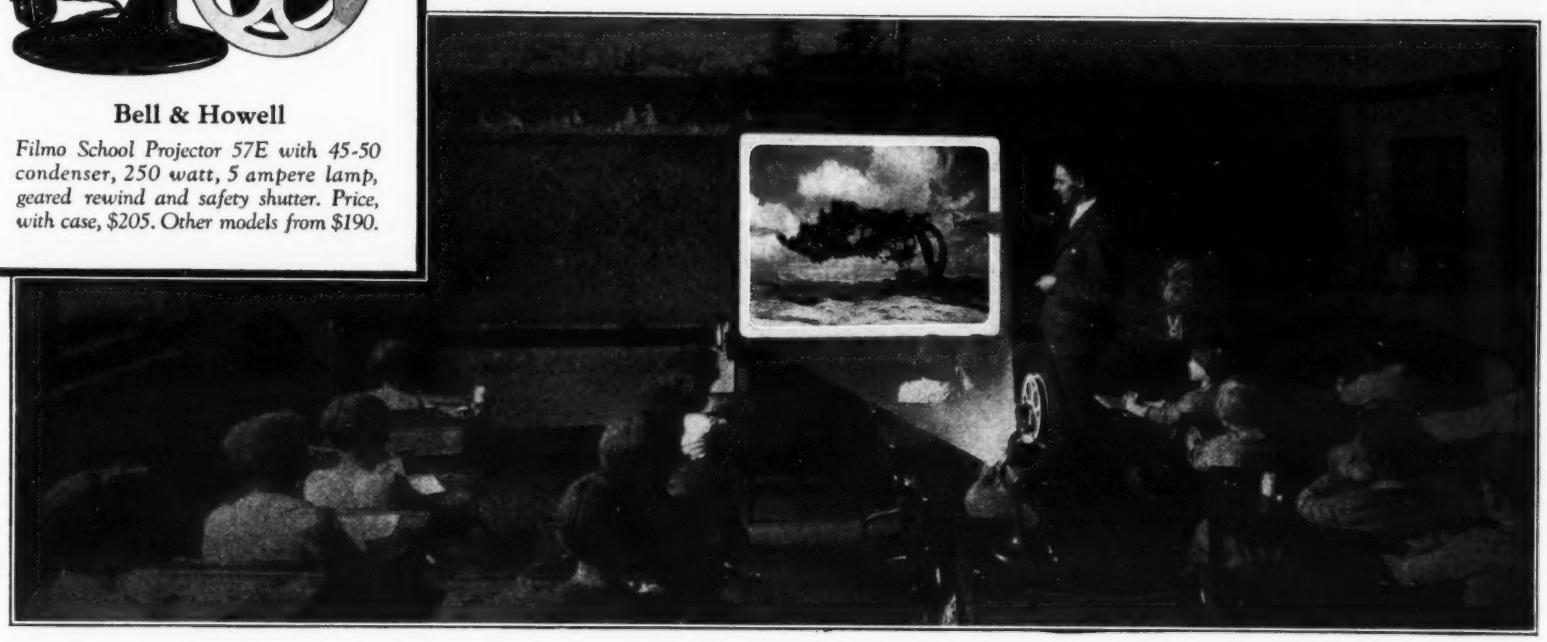

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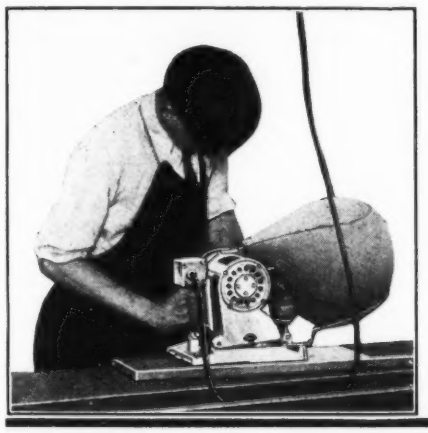

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New Third Reader

By Eva A. Smedley and Martha C. Olsen. Cloth, 288 pages. Price, 84 cents. Hall & McCreary, Chicago, Ill.

This book has been prepared with the thought in mind that the basic reader should embody all the reading—silent and oral—skill and impart all the desirable habits. In addition, the content should be of intense interest and permanent value. The present authors have splendidly achieved their purpose.

The New Wide-Awake Junior

By Clara Murray. Cloth, 112 pages. Price, 65 cents. Little, Brown & Company, Boston, Mass.

School and play activities make up the subject matter of the stories in this simple primer. A vocabulary of 207 carefully chosen words, a conversational style, and splendid illustrations distinguish the book.

Growth in Spelling

By Edward L. Thorndike and Julia H. Wohlfarth. Book I, cloth, 120 pages. Book II, cloth, 153 pages. Published by the World Book Co., Yonkers, N. Y.

The study of spelling in the grades must enable the pupils to attain two aims: First, the ability to spell the four or five thousand words commonly used in writing; second, the ability to learn the spelling of words in school and in life as one sees them when reading or at other times.

The present books are intended to meet these purposes through the development of greater interest in words and better habits of perceiving. It is expected that the pupils who complete the work will make a better showing in the number of words learned in school than pupils taught by the older methods.

Book I is for use in grades one to four and is arranged to cover eighteen weeks of work. The material provides for reading, writing and spelling, with a dictation lesson on the last day of the week. The exercises become more varied and difficult as the work proceeds. The last four pages are devoted to a dictionary list for study and practice.

Book II is intended for use in grades five to eight and covers eighteen weeks of work for each school year. The material offers a more varied and difficult grade of work for reading, writing, and spelling, arranged according to a weekly program. Each lesson contains suggestions for a Friday test. The last part of the book is devoted to an appendix of suggestions for using the exercises, graded tests, rules for spelling, use of the dictionary, types of special exercises, and common abbreviations.

The books offer a wealth of helpful material to stimulate good spelling and should prove practical for use in the elementary schools. Teachers should find the books helpful in stimulating interest and attention on the part of the pupils and in promoting good spelling in all oral and written work.

Work-Test Manual in American History

By W. A. Butcher. Paper, 192 pages. Published by The Macmillan Co., New York and Chicago.

This manual is complete for the study of United States history from the earliest settlement of the colonies, to the present time.

Fundamentals of Chemistry

By C. W. Gray, C. W. Sandifur, and H. J. Hanna. Cloth, 650 pages. Price, $1.80. The Houghton Mifflin Co., Boston, Mass.

This is the third revision of a book which has been deservedly popular during the past five years. The text has been carefully revised, and new chapters have been added to emphasize the newest discoveries in the electronic theory of matter, the atmosphere, paints and lacquers, and the chemistry of agriculture. The new edition emphasizes very strongly the applied characteristics of the original work.

Mechanical Drawing

By A. K. Rigast. Paper, 79 pages. Price, $1.40. The Macmillan Company, New York and Chicago.

These instruction and job sheets cover the work usually offered in two years in senior high schools.

New Practical Physics

By N. H. Black and H. N. Davis. Cloth, 645 pages. Price, $1.20. The Macmillan Company, New York and Chicago.

This is the fourth revision of a book first published in 1913. Its chief characteristics are the simple presentation of essential material, the use of the latest and most interesting developments in industry, as well as the newest discoveries in science, complete supplementary problems and questions, modern illustrations in which the human-interest element is emphasized.

The Questionnaire in Education

By Leonard V. Koos. Cloth, 174 pages. Price, $1.25. The Macmillan Co., New York and Chicago.

Educators who have been bothered repeatedly with questionnaires will appreciate the first two recommendations which the author of this study makes: Questionnaire studies should be undertaken only when there is need for them. The questionnaire method should be employed only when there is no other feasible way of securing the information required.

The book deserves to be read by every individual engaged in educational research. It should be studied intensively by every candidate for a higher degree who must make use of the questionnaire for the collection of information.

Adventures in Storyland

By Frances Lilian Taylor. Cloth, 144 pages. Price, 64 cents. Beckley-Cardy Company, New York City.

This first reader deserves attention because of its extended vocabulary, interesting stories, and the excellent illustrations. Rhyme, repetition, and dramatic values have been emphasized as memory aids.

Modern Life Arithmetics

By John G. Fowlkes and Thomas T. Goff. Book two, cloth, 402 pages, price, $0.75; Book three, cloth, 445 pages, price, $0.75. Published by the Macmillan Company, New York, Chicago.

Book two of this series of arithmetics is devoted to material for use in the fifth grades. The book is written in terms that the child can understand and great care has been taken with the abstract material. All useless and artificial matter has been omitted, while a large amount of illustrative material has been included. Generous use has been made of the project form of organization.

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The material covers lessons in addition, subtraction, multiplication, division, decimals, fractions, denominate numbers, banking, percentage, and budgeting and keeping of accounts. Each lesson is followed by a chapter review which fixes firmly in the pupil's mind what he has learned in the preceding lesson.

Book three of the series offers material for use in the eighth grade and represents the last formal arithmetic work which the pupil will have. In this book great care has been taken to provide abstract paragraphs which is complete as to the type of example, as well as to number combinations. All of the problems are based on experiences that are often met in human activities and generous use has been made of the project form of organization.

The material includes problems in testing of addition facts, subtraction, multiplication, division, fractions, decimals, percentage and denominate numbers, graphs and pictograms, taking care of money, meter reading, practice in geometry, business arithmetic, saving and investment, everyday arithmetic, formulas, equations and the metric system, ratio, proportion and square root, taxation, insurance, public business, and positive and negative numbers. Each lesson is followed by a chapter review to show what the pupil has learned in the preceding lesson.

The books are entirely practical and usable in character and the problems offer a wealth of material of interest and value so that they should prove useful in the fifth to the eighth grades. The material offers practice in a wide variety of everyday activities and provides practical training for the pupil which will be useful to him when he leaves school.

Mother's First Book

By Cora Wilson Stewart. Paper, 84 pages. Published by the National Illiteracy Crusade, Washington, D. C.

This booklet is an introductory reading book suitable for adult classes and is intended for the use of home women who cannot read or write. While the book may be used in the classroom, it is designed for use in the home. The lessons are centered around the home and the daily activities and are based on simple everyday tasks, such as cleanliness, care of the children, proper foods, and school and home subjects.

The last section of the booklet contains an alphabet and a rather extensive word list for the use of those beginning to read.

Education Pays

Paper, 10 pages. Price, 10 cents. The Pointerex Club, New York City.

The booklet shows the benefits of education in money, personality, power, fame, and success. It suggests methods for getting an education, but it appears to overemphasize the money value of an education as the sole means of happiness and success.

The Universal Speller

By C. A. Phillips and Martha M. Powell. Cloth, 144 pages. Price, 60 cents. Published by Houghton Mifflin Co., Boston, Mass.

The title of this book is splendidly chosen. The work begins with the first grade and carries through to the end of the eight grade. The vocabularies have been selected with due attention to the latest research in both school and adult vocabularies, and with especial care for difficulty and utility at each of the grade and age levels. The work of each year is introduced by complete directions for the teachers and for the pupils.

The work is thoroughly motivated and there are splendid devices for drill, for written and oral tests, for games, for corrective reviews, and for vocabulary building. Supplementary lists at the end of the book include occupational and general lists covering a wide range of human activities, homonymns, suffixes, pronouns, special words and phrases, and spelling demons.

The book well developes the authors' fundamental conception of a speller—teach, test, study.

Before Columbus

By Cecil E. Stevens. Cloth, 191 pages, illustrated. Published by Silver, Burdett & Company, New York City.

This collection of descriptive sketches and folk tales provides a well-rounded and interesting picture of Indian life in Porto Rico before the coming of the Spaniards.

A Critical Study of Measures of Achievement Relative to Capacity. By Mr. C. W. Odell. Paper, 58 pages. Price, 50 cents. Published by the University of Illinois, Urbana, Ill. The use of measures of achievement relative to capacity has been one of the suggested and widely employed procedures in connection with the standardized test movement. The present pamphlet presents the findings of a critical study of measures of achievement in determining the capacity of a pupil. A brief account of the origin of the various suggested measures is followed by discussions of the merits and demerits of the different measures and of the validity and reliability of such measures in general. A review of the known studies of the reliability of measures of achievement has led to the conclusion that their reliability is unsatisfactory. This is supported by original data obtained by the writer. Their reliability is so low that it is recommended that they never be employed for the diagnosis, classification, or other treatment of individual pupils, except where they are based upon the combined results from several group tests or one individual intelligence test. Relative measures, for a class or larger group do, however, possess high reliability warranting their use. The findings show that proper grade placement, satisfactory motivation, and teaching methods adapted to pupils' abilities generally result in reducing the negative correlation between intelligence quotients and accomplishment quotients to practically zero.

The writer attempted to discover a method of estimating the reliability of achievement quotients from that of achievement and mental ages, but so far as he was able to learn, there is no valid formula for the purpose. The writer did, however, discover two methods, one somewhat better than the other, by which the reliability of achievement quotients may be estimated approximately, when those of achievement and mental ages are known. Both of these deal with probable or standard errors. Nothing based upon coefficients of reliability was found. Apparently the most satisfactory way of procuring a measure of the kind desired is to substitute in it the average achievement and mental ages of the group rather than those of an individual pupil, and thus secure a probable error applicable to the achievement quotients of the whole group.

The writer found that there is little choice between difference measures and quotient measures. There appears to be a slight tendency for the coefficients of correlation of the difference measures to be larger and the corresponding coefficients of alienation smaller, than those of the quotient measures. The probable errors of measurement of the difference measures are distinctly greater than those of the quotient measures, but their ratios to the means and standard deviations are in most cases slightly less than the corresponding ratios for

(Concluded on Page 168)

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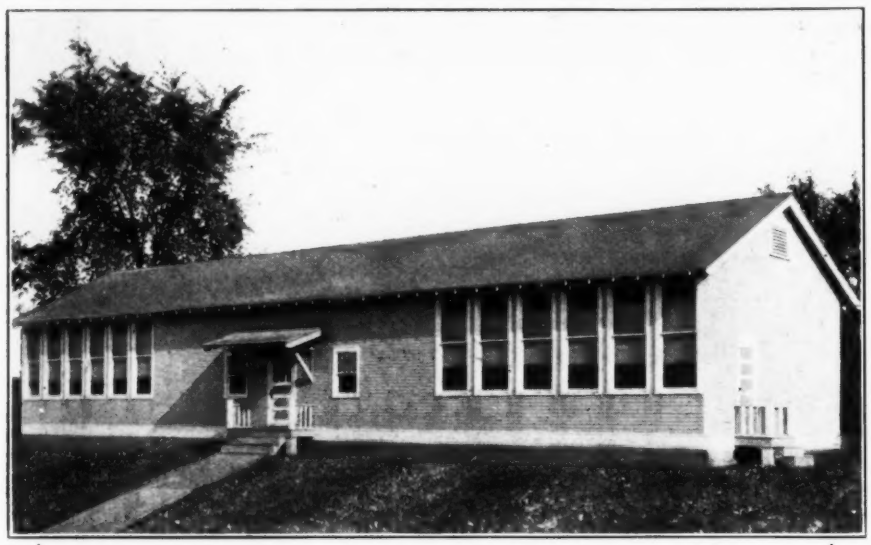

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(Concluded from Page 166)

the quotient measures. The difference is so small as to justify the assumption that there is little difference in the reliability of difference and quotient scores.

PERSONAL NEWS

—Mr. R. L. Hunt of Las Animas, Colo., has been elected superintendent of schools at Madison, S. Dak., for the next school year.

—Mr. Wayne Gray of Jerome, Mich., has been elected superintendent of schools at Addison, to succeed C. E. Marshall.

—Supt. R. E. Garrett of Belvidere, Ill., has been reelected for another year.

—Mr. R. E. Oehrli has been elected superintendent of schools at Montague, Mich.

—Supt. C. L. Matheison of Memphis, Mich., has been reelected for a fifth consecutive term.

—Mr. F. R. Caldwell of West Newton, Ind., has been elected superintendent of schools at Paoli for the coming school year.

—Supt. Adolph Paulson of Lidgerwood, N. Dak., has been reelected for the next school year.

—Mr. H. S. Freeman has been elected superintendent of schools at Mobridge, S. Dak., to succeed R. W. Kraushaar.

—Mr. J. H. Gregory of Kingsville, Tex., has been elected superintendent of schools at McAllen, to succeed J. D. Bramlette.

—Mr. Edwin E. Swanson of Manson, Iowa, has been elected superintendent of schools at Humboldt for the next year, to succeed H. F. Jakway.

—Supt. O. H. Whitehead of Rock Rapids, Iowa, has been reelected for another year, with a substantial increase in salary.

—Mr. J. F. Cadenhead of Shubuta, Miss., has been elected superintendent of schools at Waynesboro.

—Mr. E. L. Weaver of Scottsbluff, Nebr., has been reelected for a new three-year term, with a substantial increase in salary.

—Mr. James F. Ryan has been elected as a member of the school board of Dubuque, Iowa, to succeed L. F. Metz.

—Mr. C. W. G. Bailey has been reelected as president of the school board at Rutherford, N. J.

—Supt. G. L. H. Johnson has been reelected head of the schools at Danville, Va., for a four-year term, beginning with July 1.

—Supt. C. H. Bryan of Melvindale, Mich., has been reelected for a new two-year term, with an increase in salary.

—Mr. Hubert Shinn has been elected superintendent of schools at Hart, Mich., to succeed Mr. H. L. Bleecker.

—Supt. E. E. Fell of Holland, Mich., has been reelected for his twentieth consecutive year on a three-year contract.

—Supt. C. E. Rising of Leon, Iowa, has been reelected for another year.

—Mr. W. H. Gardner has been elected superintendent of the Ollie consolidated schools at Ollie, Iowa, to succeed Mr. K. L. Benner.

—Supt. F. E. Niles of Lewis, Kans., has been reelected for a third consecutive term.

—Supt. Charles Hall of Marion, Kans., has been reelected for another year.

—Mr. John Woehlk has been elected head of the schools at Garwin, Iowa.

—Supt. F. E. Lurton of Aitkin, Minn., has been reelected for a sixth consecutive term.

—Supt. J. R. Ridgood of Hubbard, Oreg., has been reelected for a fourth term.

—Mr. S. C. Haddock of Jupiter, Fla., has been elected superintendent of the consolidated schools at Montezuma, Ga.

—Mr. G. E. Brown of Greeley, Colo., has been appointed as state commissioner of education for Wyoming. Mr. Brown succeeds Mr. L. C. Tidball, who has gone to the University of Washington.

—Supt. P. E. Stewart of Santa Barbara, Calif., has been reelected for a new four-year term, at his present salary, and with a substantial increase for the last two years of the term.

—Mr. R. B. McComb of Douds, Iowa, has accepted a position in the high school at Milton.

—Mr. W. W. Isle has been elected superintendent of schools at Ponca City, Okla., to succeed J. T. Hefley.

Mr. Milton Ellison has been elected superintendent of schools at Kinde, Mich., to succeed C. H. Bush.

—Supt. H. E. Anderson of Stewart, Minn., has been reelected for the ensuing year.

—Supt. A. E. Gump of Slater, Iowa, has been reelected for the next year, with a substantial increase in salary.

—Supt. Earl C. Duncan of Clarinda, Iowa, has been reelected for a new three-year term.

—Mr. J. L. Shouse has been elected assistant superintendent of schools at Kansas City, Mo., to succeed Mr. F. H. Barbee.

—Supt. R. V. Cramer of Lebanon, Mo., has accepted a position in the school system at Kansas City.

—Supt. R. J. Ilse of Yuma, Colo., has been reelected for a fifth consecutive term.

—Supt. G. O. Kelley of Bridgeport, Nebr., has been reelected for a sixth consecutive term.

—Supt. H. J. Blue of Carlinville, Ill., has been elected president of the southcentral division of the Illinois Teachers' Association.

—Supt. I. R. Gronlid of Lytton, Iowa, has been reelected for the ensuing year.

THE MANAGEMENT OF A LARGE SCHOOL HEATING AND VENTILATING PLANT

(Concluded from Page 158)

for all of the equipment installed, should be a part of the records of the chief engineer.

In Conclusion

147. Finally: These instructions may seem most complicated at first sight. But, if they are considered in the nature of an attempt to write out detailed directions for one whose experience and understanding of a very important position is unknown to the writer, they will seem less formidable.

148. All of the suggestions cannot be put into effect at once, any more than a huge building like this can be built over night.

149. The organization suggested must be a process of directed growth. So long as there is growth, the man responsible for the progress can be happy. But, he need not expect much approval beyond his own knowledge that he had done his best. If he can get that much, he has little more to expect.

150. He cannot hope for perfection in operation.

(Concluded on Page 171)

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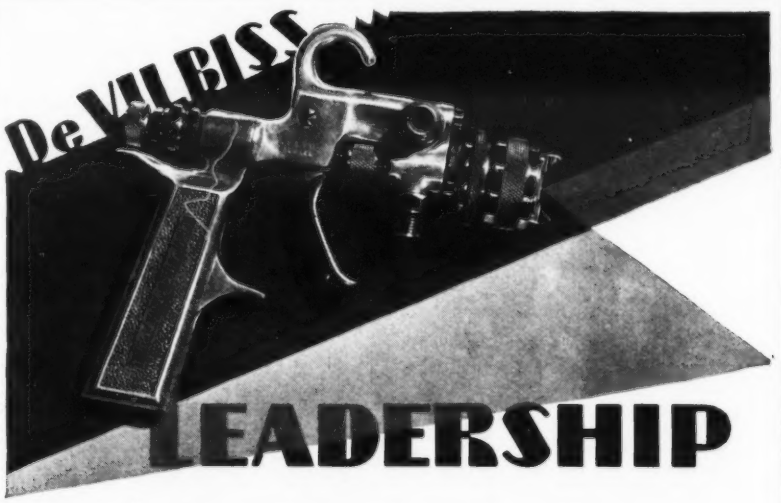

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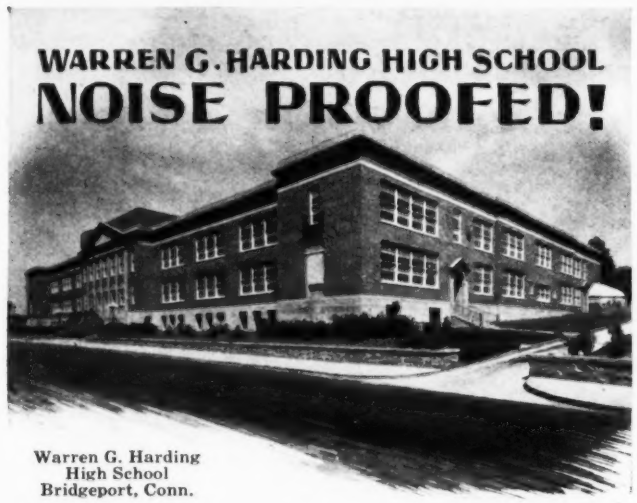

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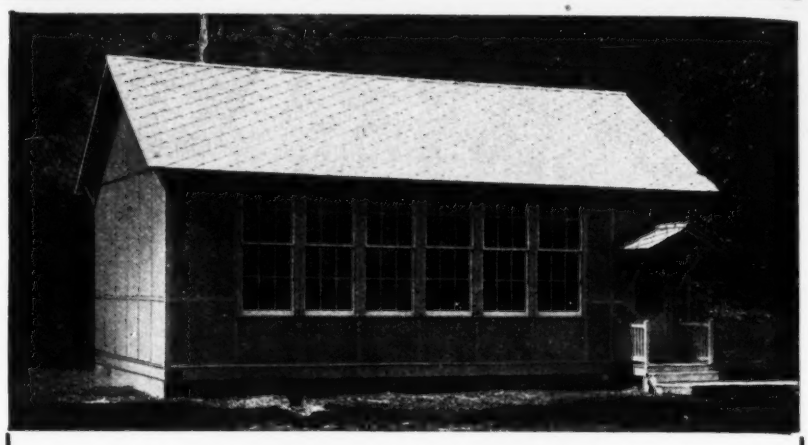

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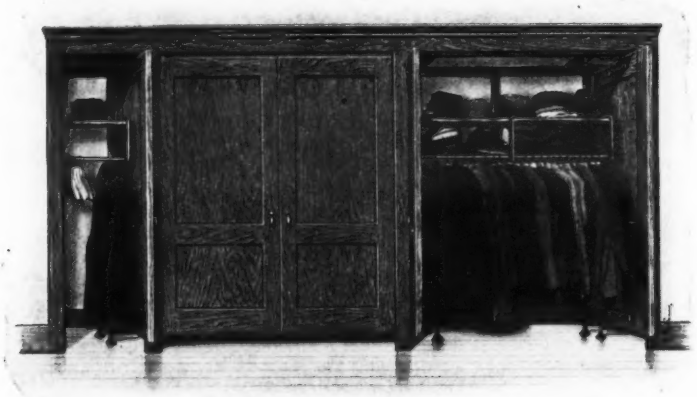

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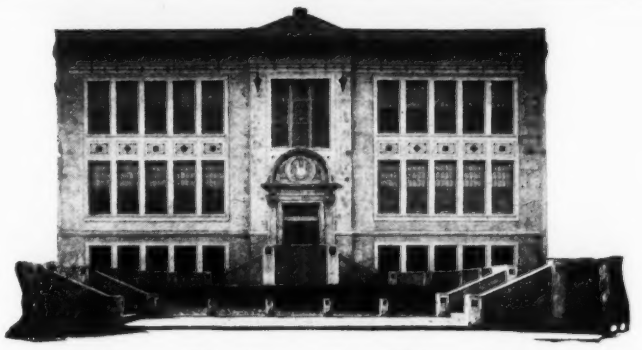

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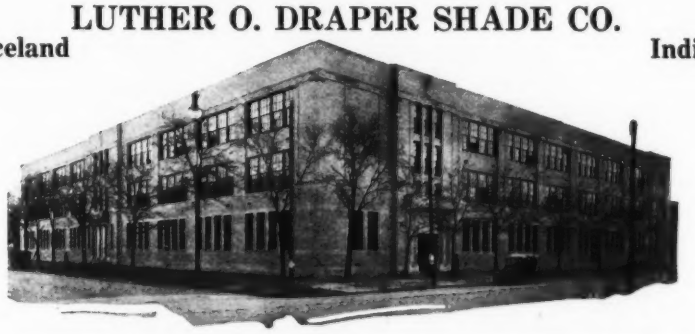

(Continued from Page 168)

There is no such thing. But it can be pictured, and it can be hoped for, and it can be planned for.

151. And the more clearly the man responsible can have these three things in mind, and the more consistently he can act up to them, the greater will be his attainment.

152. It is the hope of the man who writes these notes that the operation of this building will come a little nearer to perfection than any other school building in the United States. And he will hold himself ready to do anything possible towards this end, just as he had had it in mind now for almost two years.

THE COURTS AND PUPIL TRANSPORTATION

(Continued from Page 50)

dren living in the district, who are attending school in another district.

In the absence of a law specifically stating that children may be transported to school outside the district in which they live, such transportation cannot be required and public funds may not be used for this purpose. This point is very definitely established by the court decisions just mentioned, but is one often overlooked by boards of education in their desire to provide all children with an opportunity for an education. The transportation of children to and from school at public expense is still preeminently a local matter to be solved by each district, unless the State otherwise provides as some states are now beginning to do.

Power of Conveyance

In the majority of cases the power given by the statutes to a school district to provide transportation is strictly limited both as to the type of district and to the distances for which transportation may be offered. The usual interpretation of such laws by the courts has been quite narrow, holding strictly to the statutory wording, with one rather noteworthy exception in the northwest. The supreme court of South Dakota has held to the contrary of the general rule, and it is so much the exception that the decision will be quoted. In this case, the court held that the fact that a certain district was not in the list of districts enumerated in the statute as being authorized to transport children did not deprive it of the authority to convey pupils when in the judgment of the board of education such conveyance was expedient in equalizing educational opportunities for all the children of the district. Said the court: "It is true there is no statute specifically authorizing an independent school district to furnish conveyance to pupils . . . yet we find in this provision it shall possess the usual powers of corporations for school purposes. The provision seems to be broad and comprehensive and may well be deemed as covering the matter of transportation of pupils . . . to us there seems no natural reason why it should not be as necessary to provide for transportation for pupils attending school in an independent district as it would be in the common school district. In fact it is a matter of common knowledge that independent districts, in point of area, may be much larger than common school districts."[31] Though this interpretation is broad enough to meet any inequalities of educational opportunities, it might be doubted if it would be upheld in many other courts in view of their almost unanimous holding that one dare not go beyond the wording of the statutes and extend a power to a body not mentioned therein.

The New Jersey supreme court[32] has ruled that the duty to provide school facilities and accommodations does not imply that duty of providing free transportation to pupils living remote from the schoolhouse. Substantially the same ruling has been made by the Indiana court.[33] In another case the Indiana court[34] has also stated that in the absence of a statute specially enjoining upon the township trustees the duty of providing free transportation for school children, such trustees are under no obligations to furnish free transportation to pupils under a statute providing for the levying of a special tax for "construction, renting, or repairing schoolhouses, for providing furniture, school apparatus, and fuel therefor, and for the payment of other necessary expenses of the school except tuition."

In some states it has been held that the decision of the district to act upon the power of conveyance given by the statutes may be overruled by the decision of some other school official. In New York[35] it has been held that the state commissioner of education has the power to overrule the action of a district meeting and to require that transportation be furnished. This was a case where, under permissive legislation providing for transportation, the district meeting had voted not to provide transportation. In a South Dakota case[36] where the statute provides that in the absence of satisfactory transportation facilities, it shall be the duty of the board of education to make such provision for the schooling of the children as shall be determined by the county superintendent of schools, the court has held that it was within the power of the county superintendent to determine the provisions that should be made and to arrange all details himself and that the board of education must make the provisions determined by him.

In conclusion it should be emphasized that there is little or no transportation that is con-

[31] Dahl v. Independent School District, (1922), 187 N. W. 638, 45 S. Dak. 429.

[32] Board of Education of Frelinghuysen Township v. Atwood, County Superintendent, (1907), 65 Atl. 999, 74 N. J. L. 838.

[33] State ex rel Oliver v. Grubb, Trustee, (1882), 85 Ind. 213.

[34] State ex rel Beard v. Jackson, (1907), 81 N. E. 62, 168 Ind. 384.

[35] New York Educational Department, Opinion, (1926), 35 St. Dept. (N. Y.) 420.

[36] Mendenhall v. Slim Buttes District No. 4, Harding County, (1923), 196 N. W. 97, 47 S. Dak. 95.

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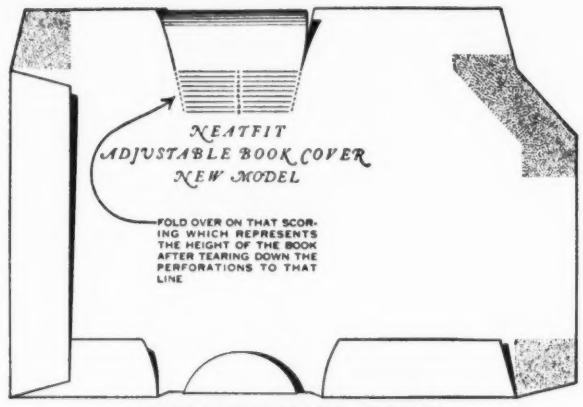
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stitutional unless it is definitely provided for by the laws of the state. Furthermore, if the state has enacted a pupil-transportation law, the children to whom it applies will depend upon the exact wording of the law. In no case has any law been interpreted to require transportation in all types of school districts within the state, but in those types of districts where required, it must be furnished. Permissive legislation may often become mandatory when controlled by the vote of the patrons or authority of high officials. When left to the discretion of a school board, the judgment of that board cannot be questioned once it is exercised. And indefinite legislation is usually considered to apply only to the elementary school as a strictly local matter because it is assumed that, if transportation provisions were meant to apply to high-school students, such would be clearly stated since the lack of conveyance there does not work such an inequality of educational opportunity.

By keeping the wording of their own state laws in mind the foregoing cases should illustrate to school-board members and school administrators the general principles which the courts have laid down in applying the law, and provide a picture of the intentions of the state in extending school transportation to its children at public expense.

PUBLICATIONS RECEIVED

Fourth Yearbook of National Council of Teachers of Mathematics. Cloth, 186 pages. Prepared under the direction of W. D. Reeve, of Teachers College, Columbia University, New York. Issued by Teachers College, Columbia University, New York. The book presents a study of the changes and trends in the teaching of mathematics in the leading countries of the world as a means of improving the teaching of mathematics everywhere. In the study considerable attention is given to the teaching of the subject as it is carried on in Austria, Czechoslovakia, England, France, Germany, Holland, Hungary, Italy, Japan, Russia, Scandinavia, Switzerland, and the United States. In studying the teaching of the subject in the United States, Professor Reeve devotes considerable attention to such topics as the effects of examinations, the power of tradition, mathematics as a tool subject, standard tests, enriching influences, aims of instruction, administrative trends, fads in teaching, and more adequate preparation of teachers. It is brought out that most of the changes which have taken place in the curriculum are due to external influences which have had their effect upon the schools, while little change has been effected through research. It has been found that certain studies of the social demands for mathematics have been influential in modifying the amount and kind of mathematics taught in the schools. The authors believe that the outlook for mathematics is bright, and that the next step toward improvement should be in the direction of organization along better lines, and in the improvement of instruction through the efforts of the teachers. We can hardly agree with some of the present-day fads in the philosophy of education reflected under the statements of present aims of instruction.

A Continuous Census of the Schools of Medford, Oreg. This census does not in any way supplant the annual school census required by law in October of each year, but it does supplement the annual school census, keeping the district's records up to date concerning the shifting of population, transient population, and the enforcement of the compulsory education laws. The director, who is responsible for the proper functioning of the continuous census, works in conjunction with the school office, and appoints all the enumerators and directs their work.

Laws Relating to Compulsory Education. By Ward W. Keesecker. Paper, 70 pages. Price, 15 cents. Bulletin No. 20, 1928, issued by the U. S. Bureau of Education, Washington, D. C. The booklet is intended to present a summary of the most striking legislative features of compulsory-education systems in the various states. It discusses in detail such important items as the various ages at which children are admitted and required to attend school, the educational requirements necessary to exempt them from attendance, educational relief for dependent or delinquent children, the length of school attendance required in the various states, and the machinery used for enforcing compulsory education in the states. There is a digest of some of the features of compulsory-education laws in the states.

Child Workers on City Streets. By Nettie P. McGill. Paper, 74 pages. Price, 15 cents. Bureau Publication No. 188, 1928, issued by the children's bureau of the U. S. Department of Labor, Washington, D. C. The pamphlet summarizes the findings of the investigations made in this field by the industrial division of the children's bureau and other agencies. It meets the demand for a brief analysis of the available information on the various aspects of child labor.

Blackboard Slate. Bulletin No. 15, 1925. Paper, 7 pages. Price 5 cents. Published by the U. S. Department of Commerce, Washington, D. C. The pamphlet contains the revised standards for sizes of slate, wall spaces, thickness, and finish of blackboards.

May Day Festival Book for 1929. Suggestions for celebrating child health day. Paper, 76 pages. Published by the American Child Health Association, New York City. The booklet is in the form of a book of suggestions, pictures, and other material showing methods for celebrating this day dedicated to the childhood and youth of the country. It contains material for plays and pageants, parades and floats, exhibits and demonstrations, and folk dances.

American Council Civics and Government Test
By Robert D. Leigh, Joseph D. McGoldrick, Peter H. Odegard, and Ben D. Wood. Published by World Book Co., Yonkers, N. Y.

American Council Economics Test
By Horace Taylor, Thomas N. Barrows, and Ben D. Wood. Published by the World Book Co., Yonkers, N. Y.

American Council Solid Geometry Test
By Henry W. Raudenbush, L. Parker Siceloff, and Ben D. Wood. Published by the World Book Co., Yonkers, N. Y.

American Council Trigonometry Test
By Henry W. Raudenbush, L. Parker Siceloff, and Ben D. Wood. Published by the World Book Co., Yonkers, N. Y.

Composition Books
Paper, 10 pages. Simplified practice recommendation R84-28 of the Bureau of Standards, U. S. Department of Commerce. The pamphlet offers standards for cover stocks, weights, and qualities of paper which have greatly reduced the number of lines and the sizes originally produced. The new standards have greatly reduced the number of grades of writing paper, the weights of paper stock, the kinds of cover stock, and printed covers.

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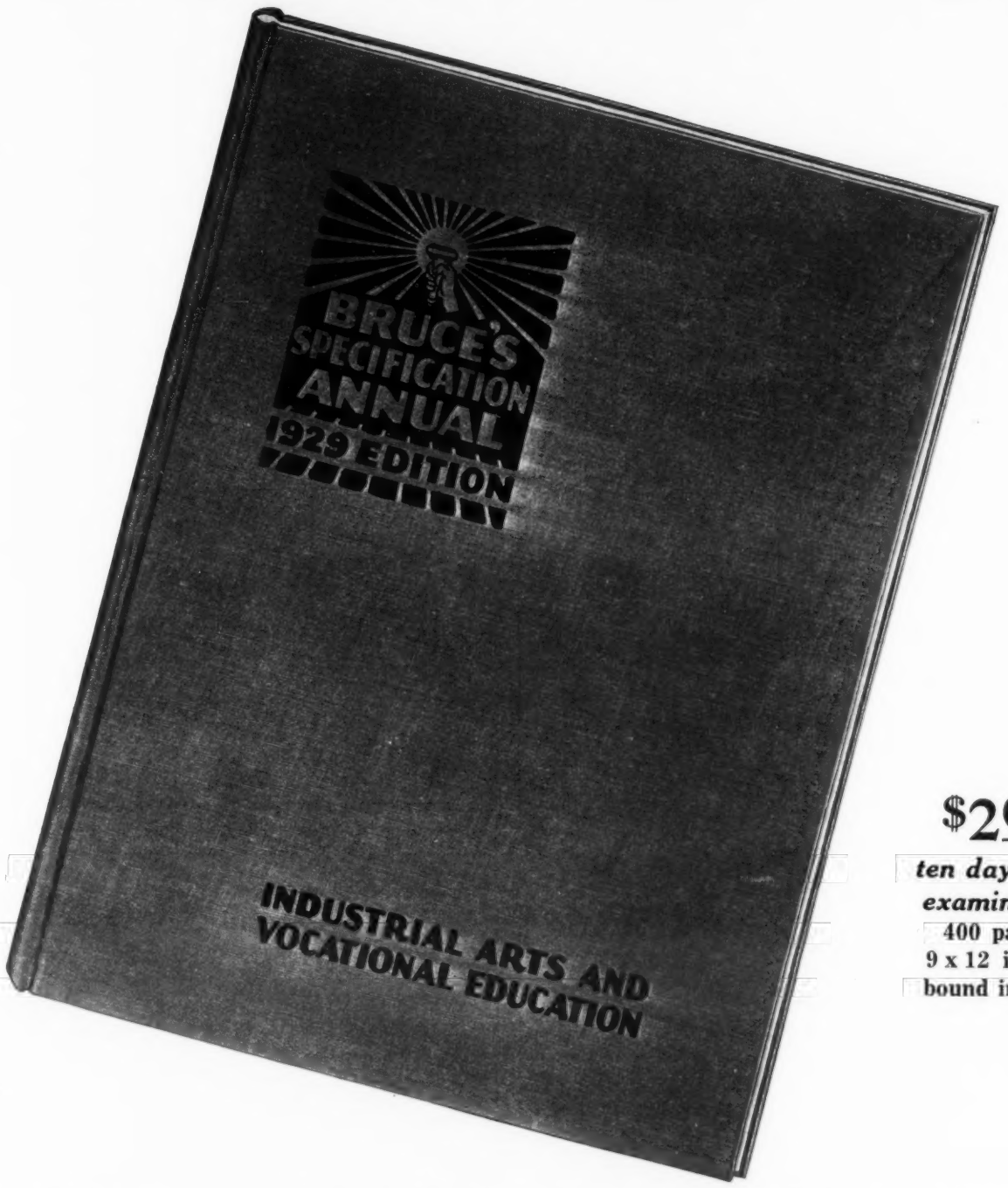

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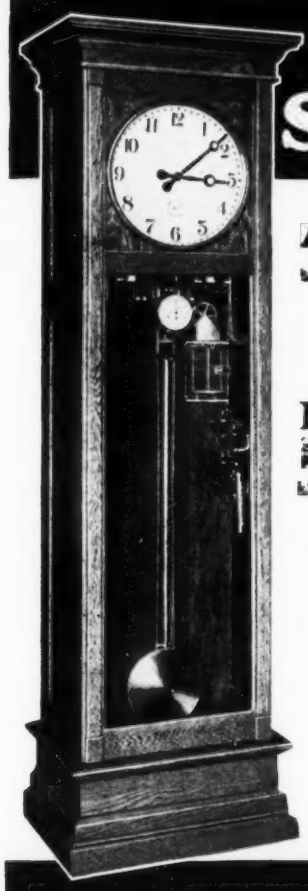

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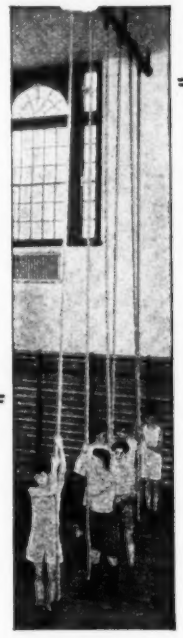

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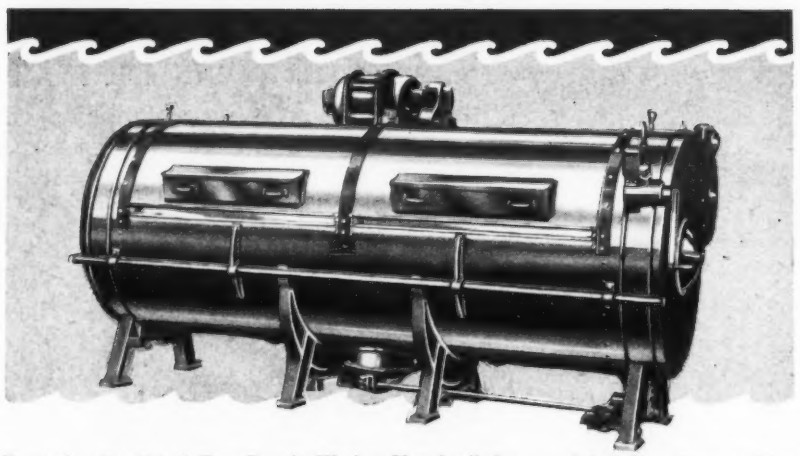

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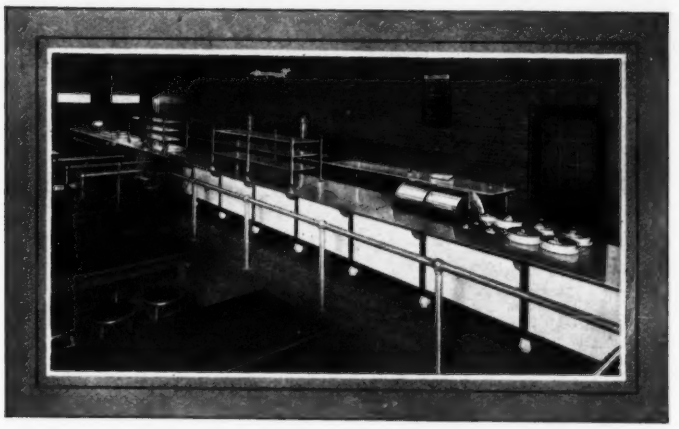

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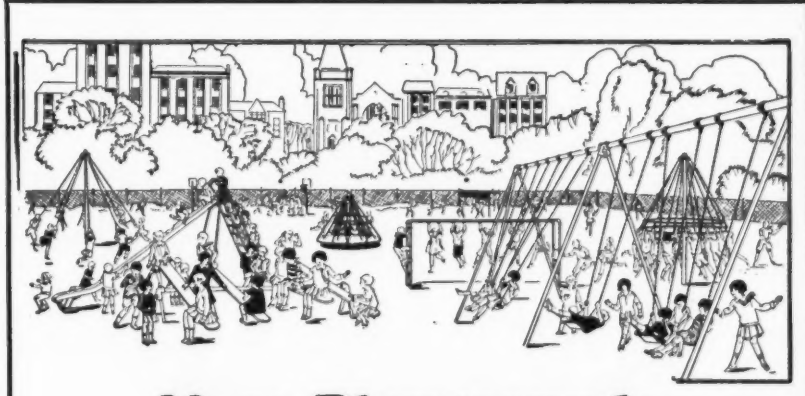

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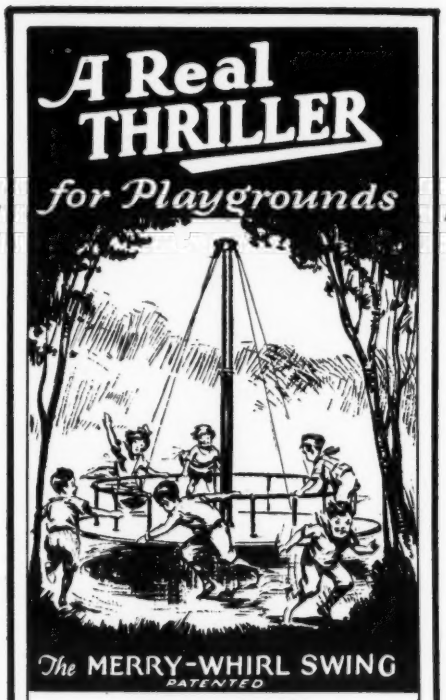

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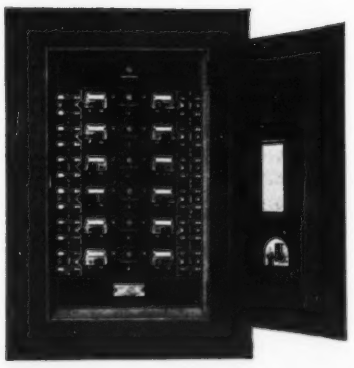

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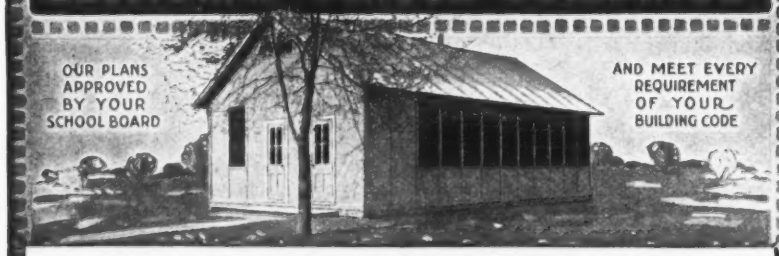

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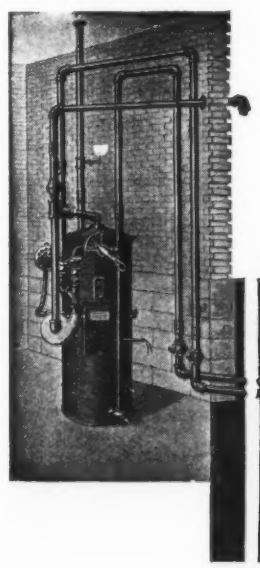

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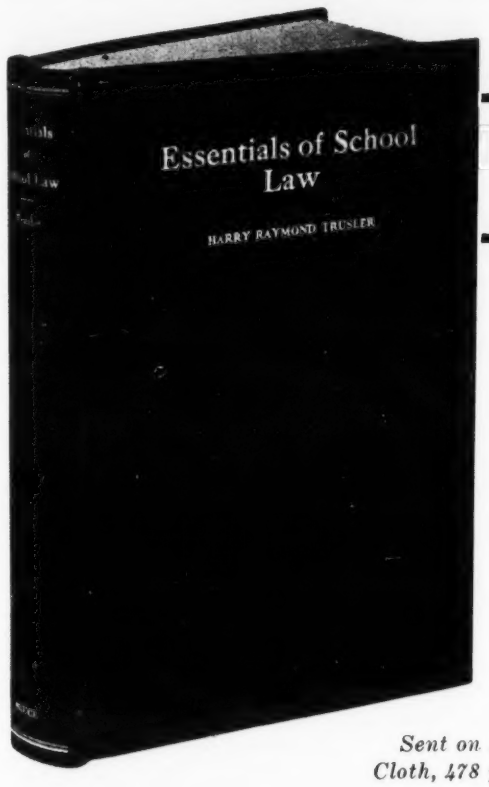

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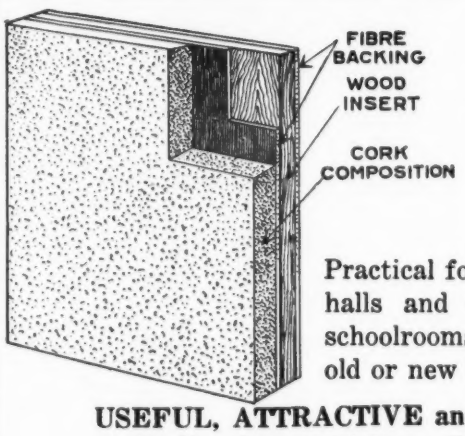

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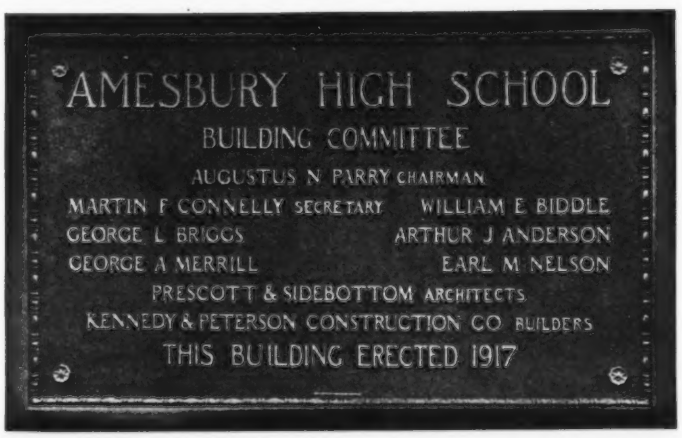

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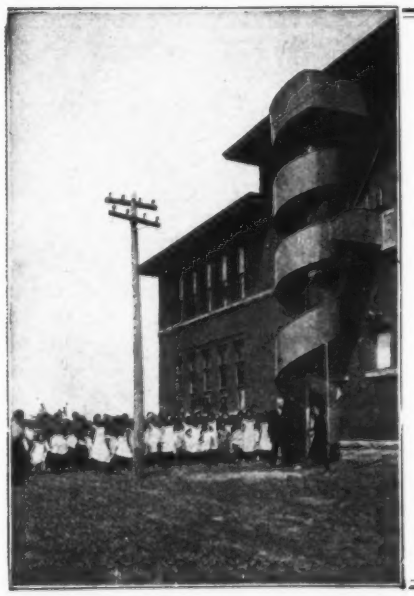

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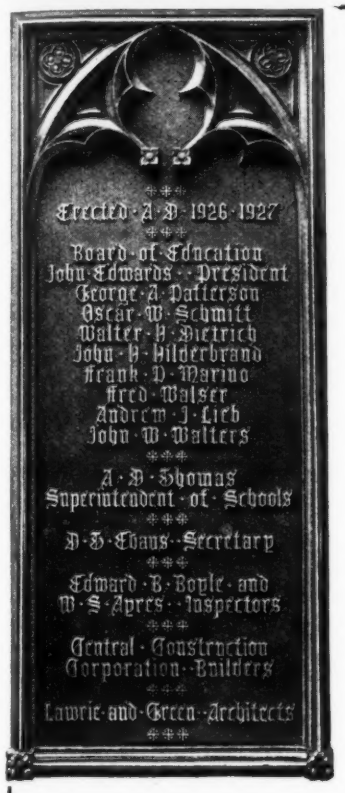

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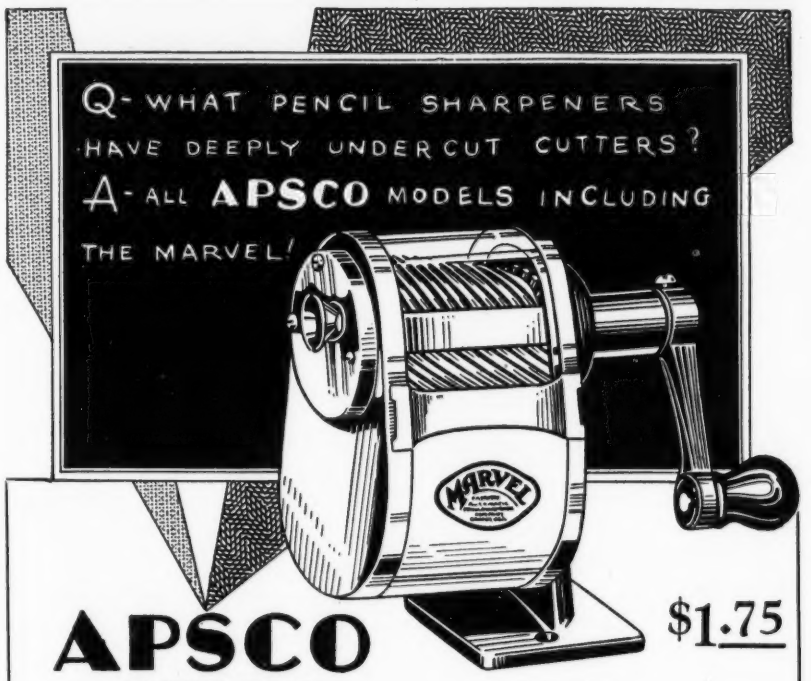

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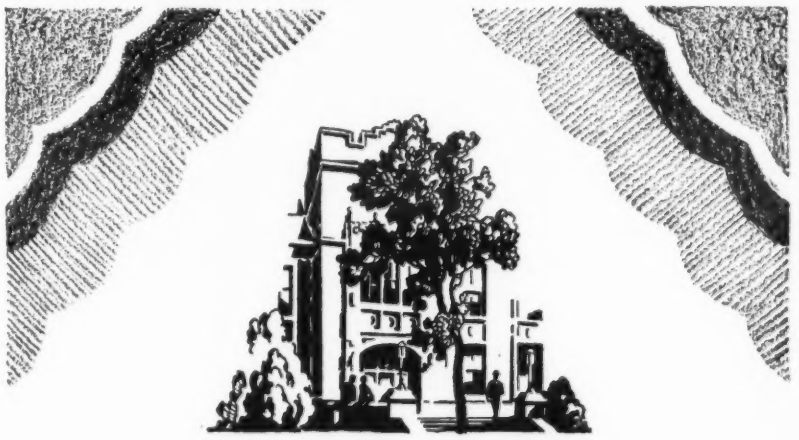

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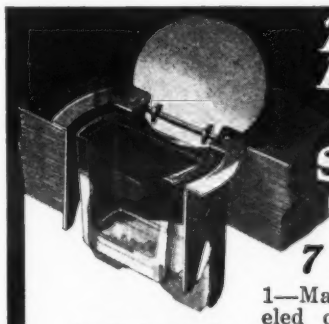

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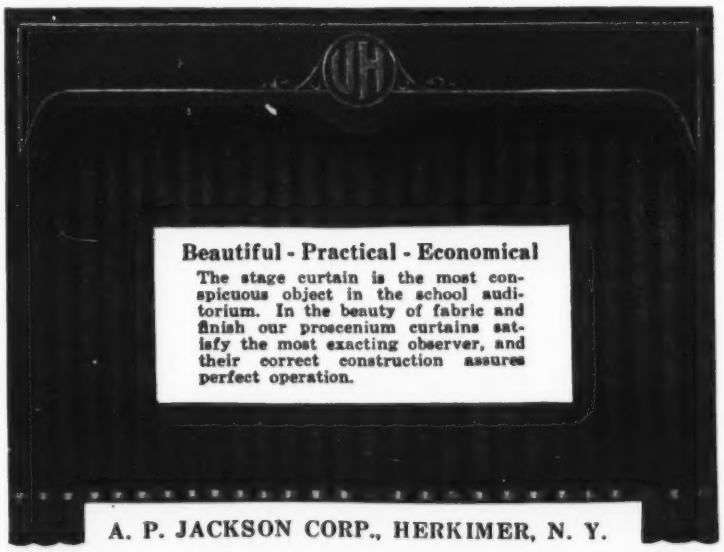
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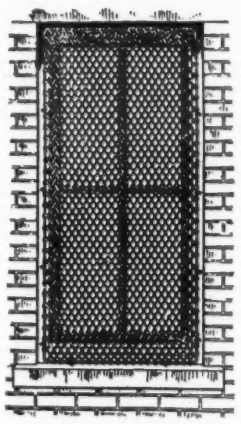

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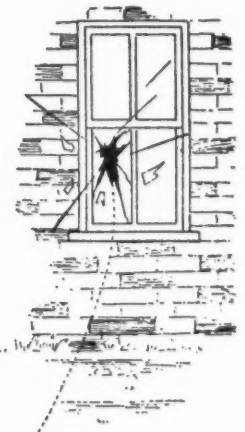

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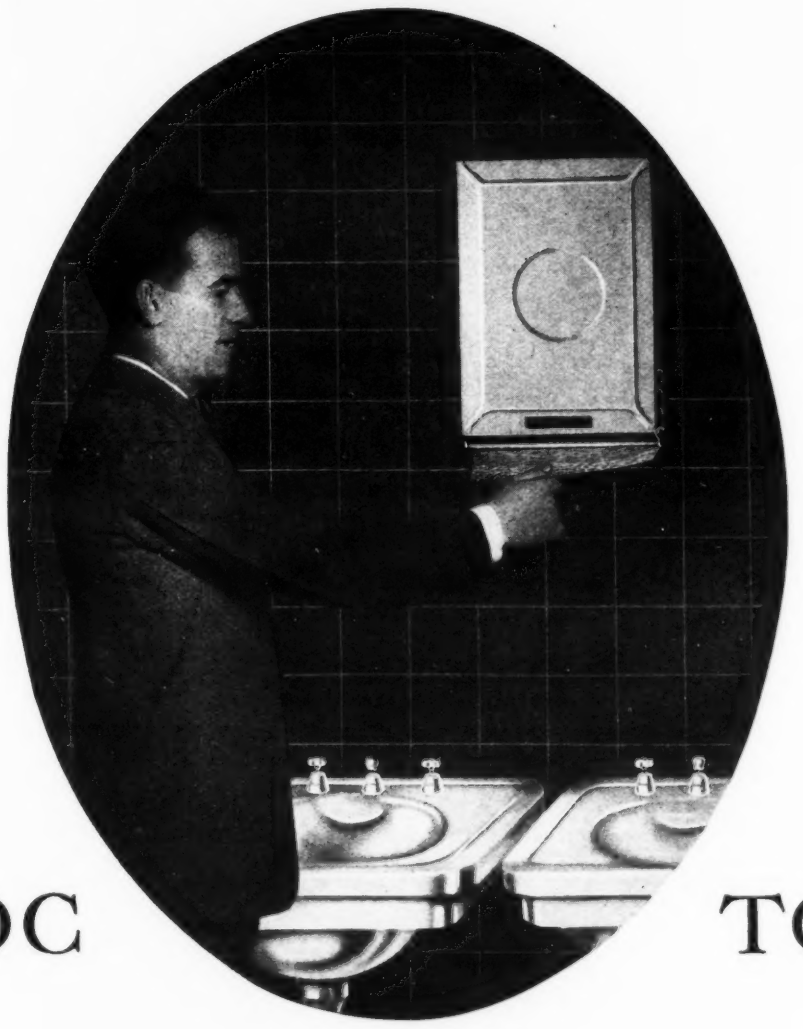
"the very finest and most economical"



NIBROC TOWELS

Approved by School Faculties for Maintaining Hygienic Washrooms

NIBROC Towels are used in schools and colleges throughout the United States. They were chosen in preference to other towels, because NIBROCS are absolutely pure, free from lint, more absorbent and economical. *One NIBROC will dry the wettest pair of hands.* NIBROCS encourage children to wash their hands often, thus promoting better health. Faculties approve NIBROCS, served individually from attractive white enameled, key-locked, steel cabinets which are loaned, free of charge, to users. Ask your supply house for NIBROCS today, or write the manufacturers direct, giving the name of your supply house.

Generous Sample Package on Request

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ATLANTA

BROWN Company
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Portland, Maine

CHICAGO
ST. LOUIS
MINNEAPOLIS
SAN FRANCISCO

BUYERS NEWS

ANNOUNCE ONE-PRICE POLICY

An announcement which will tend to reduce uncertainty in buying and allow school boards to know the approximate market price of school furniture has just been made by the American Seating Company. Effective April 1, this firm will sell on a factory F. O. B. price basis, allowing only such differential as will cover a carload and less-than-carload price. Other small variation in prices will be caused by freight rates.

The importance of this announcement is based upon the fact that the present system of public bidding always suggests a great variation in prices. The failure to make a uniform factory price suggests a failure to sell school desks on known factory producing and selling costs. The known factory price will suggest the great progress now being made in the industry to stabilize producing and selling costs.

Following a building-construction program of several years the American Seating Company has concentrated all its factory production in Grand Rapids. A very comprehensive building program has made possible very interesting production efficiency. It has, of course, involved very important economies and the standardization of all production activities, leading to known standardized factory costs.

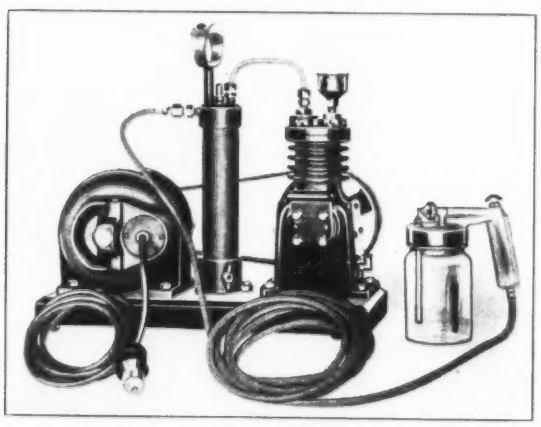
Based upon the production of school desks on a most efficient and scientific manufacturing program the management is coming forward to the schoolman with a pricing program based upon the sound economic principles of known costs and a known selling price.

It will now be possible to write the American Seating Company for prices on a carload of school furniture or less than a carload lot. The prices will come forward either through the salesman or by mail without the necessity of formal public bids. While under the law certain public bids must be taken for several years to come, the known selling price will shift the emphasis of purchases upon the quality, the type of service expected, and the educational needs of a school.

NEW SPRAY PAINTING OUTFIT FOR SCHOOLS

The DeVilbiss Company of Toledo, Ohio, has just put out a new type of spray painting and finishing outfit, which is of particular interest to school authorities.

The new type NC-601 spray painting outfit conforms in every way to the character, quality, and efficiency of the large outfits which have proved so satisfactory during the last twenty years. The outfit has the special advantages of durability, capacity, and real serviceability which make it especially useful to the practical man engaged in painting and finishing operations about the schools.



DeVILBISS COMPLETE SPRAY-PAINT OUTFIT

The new DeVilbiss outfit is also useful for work in school shops, where its easy portability, low price, and absolute dependability make it practical for trade and industrial classes engaged in school shop painting and finishing jobs.

Complete information and prices of the new type spray painting outfit may be obtained by writing to the DeVilbiss Company at 268 Phillips Ave., Toledo, Ohio.

ANNOUNCE NEW LYON NOISELESS LOCKER FOR SCHOOLS

A new improved type of noiseless locker for school use has recently been announced by the Lyon Metal Products Company of Aurora, Ill.

The new Lyon locker is equipped with corrugated rubber cushions, or silencers, which are built into the locker wherever metal comes in contact with metal. The silencers are securely fastened in the doorjambs near the striking edge of the door and on the trigger of the handle where it passes through the door in engaging with the locking mechanism, so that the objectionable sounds in locker operation are entirely eliminated. The silencers are securely fastened so that they cannot easily be removed. They are very durable and may be easily replaced at any time.

The use of the Lyon noiseless single and double-tier lockers in school locker rooms and corridors, where a number of doors are opened and closed at the same time, will greatly reduce the disturbance due to the noise of the lockers.

Complete information and prices of the new Lyon type locker may be obtained by writing to the Lyon Metal Products Co., at Aurora, Ill.

NEW YORK OFFICES OF MILLER COMPANY MOVED

The New York office and showroom of the Miller Company of Meriden, Conn., have been moved to the Scientific American Building, 24 West 40th St., between Fifth and Sixth Avenues.

In its new location, the Miller Company offers a complete display of its products, which include a complete line of portable lamps, electric fixtures, screw machine products, and incubator burners.

CABOT'S NEW INTERIOR WATERPROOF PAINT

Samuel Cabot, Inc., of Boston, Mass., has just announced the manufacture of an entirely new line of paints, which are of interest to school authorities engaged in solving the problem of proper finish in classrooms, school corridors, auditoriums, and shops. The material is known as Cabot's interior waterproof collopake and is an addition to the new Cabot line of exterior and interior collopake paints.

The Cabot collopake line is the result of a revolution in color compounding. It involves the reduction of all color pigments to submicroscopic fineness. In fact, the particles are reduced to such size that they can be seen only with an extremely powerful microscope. The colloidal condition to which the material has been reduced sets up a negative electrical charge in every separate particle of the pigment so that it is held in solution and will not settle or separate from the liquid vehicle in which it is carried. The pigment is so fine that it will pass readily through filter paper and has vastly increased penetrating power to reach into the pores of cement, brick, and wood. It also has considerably improved coloring power and durability.

Long and varied tests have shown that the Cabot colors in colloidal solution will settle at a rate which shows practically no change in the original solution after periods of three months.

The new interior flat waterproof collopake paints just produced by the Cabots show no brush marks, have excellent priming and sizing properties, great light-reflecting power, and do not easily attract dirt. They are entirely washable. Colors recommended particularly for schoolroom use are old ivory, cream, colonial buff, dawn gray, and nile green. The materials have a covering power of 500 sq. ft., and can be applied to any material, especially wood, plaster, stucco, and metal-ceiling material.

Complete details about the manufacture and color charts are available to school authorities who request them.

SPENCER CLEANED SCHOOLS

The Spencer Turbine Company of Hartford, Conn., has just issued a booklet entitled Spencer "Cleaned Schools," containing a list of 1,500 schools in which the Spencer cleaning system is installed. The booklet is a reference list for prospective purchasers and indicates the large number of repeat orders which the firm has had.

The Spencer Company has been aiding architects, engineers, and school boards in their aim for cleaner schools with cleaner air and lower operating costs. Special tools for school use make it possible for the janitor to clean easier, quicker, and better than with any other method.

A copy of the book of references will be mailed to school officials and school architects upon request.

ISSUE NEW DURABILT LOCKER FOLDER NO. 6000

The Durabilt Steel Locker Company of Aurora, Ill., has announced a new steel locker folder No. 6000, giving illustrations and descriptions of a variety of steel lockers, including single tier, double tier, multiple tier, two-person, and two-in-one lockers, also double-row, sloping top lockers with closed bases, and key cabinets.

The firm offers to send a folder containing descriptions and prices of 47 different sizes and combinations of Durabilt cabinets.

Complete information and prices of the Durand steel lockers will be sent upon application to the Durand Steel Locker Company at 600 Arnold Ave., Aurora, Ill.

ANNOUNCE MERGER OF Q. R. S. AND DEVRY CORPORATION

A merger of Q. R. S. and the DeVry Corporation has recently been announced, bringing into combination the unusual financial resources of Q. R. S. and the outstanding manufacturing ability of DeVry in this line.

The DeVry Corporation is well known for its vision, ingenuity, and the ability of its personnel, and has occupied a dominating position in the motion-picture field for the last fifteen years. The Q. R. S. has achieved wonderful financial success in a different, though closely-related field, and has only lately entered the motion-picture industry.

The present consolidation will transfer all of the motion-picture activities to the DeVry factory, under the active management of Mr. H. A. DeVry and his associates. New financial resources placed at the disposal of the motion-picture end of the business enables the completion of plans which will be years ahead of the achievements thus far recorded in the motion-picture field.

The new company will offer a very extensive line of motion-picture apparatus, which will include the whole range of motion-picture machinery, from the least expensive movie camera retailing at $39.50, to the highest priced combination talking-movie outfits for home and business.

OBSERVE TWENTY-FIFTH ANNIVERSARY

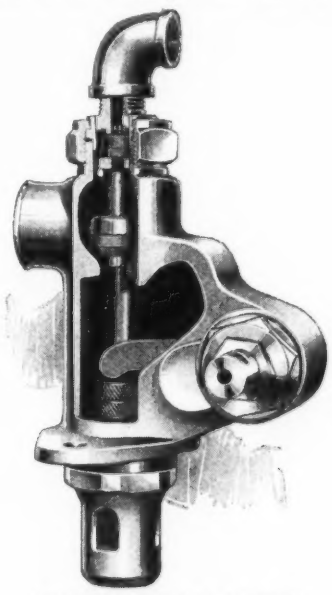
The Richards-Wilcox Manufacturing Company of Aurora, Ill., observed during the month of April the twenty-fifth anniversary of the establishment of the firm. A special anniversary issue of "Doorways," the interesting house organ of the firm, has been published calling attention to the organization, to development, and the growth of the line of hardware utilities manufactured by the firm.

Beginning with one or two items of hardware for doors the firm now manufactures 25 distinct lines ranging from its original garage door hangers to airplane hangar doors. Prominent in the list are school wardrobe door hangers, fusible links, and auditorium and gymnasium partition-door equipment, rapid-acting vises for manual training, etc.

NEW VOGEL CLOSET TESTED

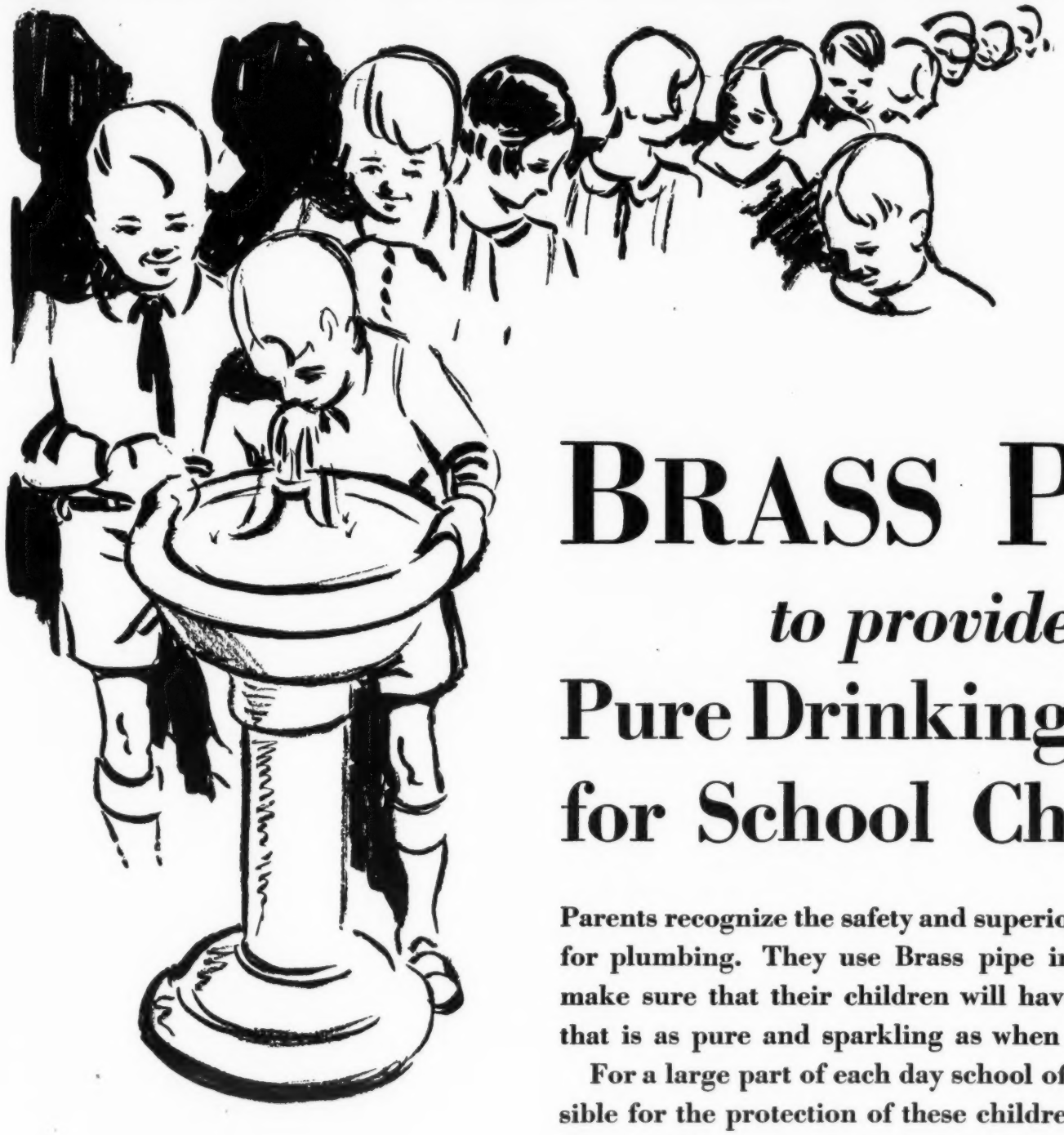
The Joseph A. Vogel Company of Wilmington, Del., manufacturers of the Vogel seat-action water closet, have just announced the results of a test conducted with the valve of their No. 10 closet.

The valve was opened and closed 150,000 times, at the rate of 65 times per minute. An electrical checking device was used for the testing to insure accuracy in the results. At the conclusion of the tests, all wearing parts of the valve were inspected and showed practically no wear. This is remarkable, when the speed of the opening and closing of the valve is taken into consideration. In order to offer increased protection to the valve during use, it is the purpose of the company to adopt a bronze of still higher tensile strength than that used in the present valve.



SECTIONAL VIEW OF THE VOGEL SEAT-ACTION VALVE

School officials, architects, and school purchasing agents may obtain copies of the circular describing the tests by writing to the Joseph A. Vogel Company at Wilmington, Del.



BRASS PIPE

to provide

Pure Drinking Water for School Children

Parents recognize the safety and superiority of Brass pipe for plumbing. They use Brass pipe in their homes to make sure that their children will have drinking water that is as pure and sparkling as when it left its source.

For a large part of each day school officials are responsible for the protection of these children. It is a duty for them to take every precaution to safeguard their health.

Water which flows through Brass pipe is free from rust discoloration and contamination which results when corrodible water pipe is used. For Brass *cannot* rust. Yet Brass pipe is not expensive.

When you equip with Brass pipe you not only make sure of pure drinking water for school children but you also eliminate repair and replacement expense. Costly frequent replacements are necessary when corrodible pipe is used.

Write for a free copy of our illustrated booklet, "Brass Pipe and Health."

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RESEARCH ASSOCIATION
25 Broadway, New York, N. Y.

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Los Angeles, Cal.

BUYERS' NEWS
(Concluded)

THE STORY OF EASTMAN CLASSROOM FILMS

Under the title of "The Story of Eastman Classroom Films," the Eastman Teaching Films, Inc., of Rochester, N. Y., has issued an interesting and instructive booklet on the preparation, use, and value of the films for classroom use.

The effectiveness of the films as teaching aids is attributed to the underlying philosophy upon which they have been planned and produced. The scenario of each film is prepared by a practical classroom teacher of long training and experience, and is planned for the definite purpose of supplementing instruction in a particular grade or a particular topic. The films are not made to entertain, but to stimulate and arouse the interest of children, to induce them to ask questions, and make application to real situations and experiences in life.

While most of the films are classed under general heads, such as geography, general science, biology, and civics, this fact does not indicate a limit to their usefulness. Each film is made for use in connection with a particular subject, but it may also be used in connection with other topics and other subjects. A single film may be used with different groups and classes of pupils several times during each term. Each film is organized on a unit basis, and each topic is divided into four fundamental subdivisions, so that it is possible to use each one of the four divisions as a separate unit of instruction.

The use of the films as teaching aids has proved that definite teaching values are possible. Teachers find that they are able to prepare a better presentation of the lesson with than without the films, and that they are able to conduct a more orderly and logical recitation. It is also shown that the pupils maintain an increased interest in schoolwork and a sustained interest in the topics presented. There is a great desire and ability to discuss subjects, a quickened originality and larger participation in project work, and an increase in the quantity and an improvement in the quality of the material read. Finally, there is a clearer appreciation of the richness and accuracy of personal experiences, and a greater facility in correlating features of the lessons with community conditions.

STANDARDS FOR FOLDING AND PORTABLE WOOD CHAIRS

In accordance with unanimous action taken in December, 1927, at a conference in Buffalo, N. Y., the U. S. Department of Commerce, through the Bureau of Standards, has approved the establishment of the following standards for folding and portable wood chairs:

Standard Types—Portable Chairs

The following six types of portable chairs are standard:

Type 1. Full framed, flush slat or shaped solid seat and back, curved.
Type 2. Full framed, flush slat or shaped solid seat and back, curved, open framed back.
Type 3. Full framed, flush slat seat, curved plywood back; top rail, single curve.
Type 4. Plywood seat, curved; plywood back, curved; without top rail.
Type 5. Plywood back, top rail curved; plywood seat, curved.
Type 6. Full framed, flush slat or shaped solid seat; continuous slat back without mullions.

Portable chairs will be made as singles, in 2's and 3's; all other combinations will be considered special.

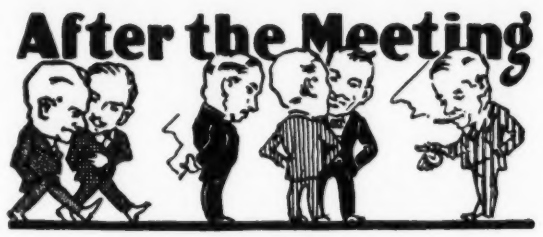
The standard finish for portable chairs will be brown walnut; all other finishes will be considered special.

Standard Types—Folding Chairs

The following three types of folding chairs will be standard:

Type 1. A heavy, flat folding chair, with posts 1⅛ in. or more wide, seat and back 14½ in. or more in width, reinforced with one or more steel rods, and with either swinging or stationary back. Two designs may be produced conforming to this type.
Type 2. Flat folding chair, with posts less than 1⅛ in. in width, with or without a steel rod, and with seat and back frames less than 1½ in. in width, slat or plywood panel seat and back. Two designs may be produced conforming to this type.
Type 3. A wood folding chair, with hand-sawed or bent posts, with curved seat and back, with plywood or slats in seat or back, with plywood slats or spindles in seat or back, or with flat seat and back.

The standard finish for folding chairs will be natural. All other finishes will be considered special.



SOME NEW HOWLERS

After hearing some comments on one of his lectures, Dr. L. F. Vanhagen, of the University of Wisconsin, was inspired to test the working knowledge of the English language, possessed by the engineering students in his class. Without warning, he asked them to write down the meaning of a number of words in common use, and then he examined their definitions. He found that some of his students defined "potent" as "something drinkable;" "agrarian" was "grass-eating," and "pseudo" "a Mexican coin." A test was then arranged by Dr. Vanhagen, and the result adds some admirable specimens to our cabinet of howlers. "Celibacy" was defined as "happy persons" and "sextant" as "a person who rings the church bell." "Pedantic" was translated by "traveling on foot," and "phonetic" by "bordering on the insane." One young genius affirmed that "perile" meant "pertaining to dogs," while another wrote that "albino" was "an animal similar to a mule."

Tossed

Lecturer—Can anyone give the derivation of the word "auditorium"?

Listener—Yes, from "audio," and "taurus," bull. A place where you—

Lecturer—That will do.—Washington Dirge.

Knew the Difference

A primary teacher at Sikeston, Mo., was talking about bears to the 6-year-olds and the children were asked by her what baby bears are called. "Cubs" were finally named, but one little tot insisted that they are "teddy" bears. Another little girl promptly gave her companion a hard look and said, "No, that's underwear."

What He Was

Recently a reporter visited one of the classes in English for foreign-born at the night school for adults in Long Beach, California. Though there are but 30 members in this class, 13 nationalities were represented in this cosmopolitan gathering, including representatives from Germany, Italy, Czechoslovakia, Bulgaria, France, the Philippine Islands, Spain, Finland, Sweden, Denmark, Switzerland, and China.

During the reporter's visit one youth rather startled the class by bravely announcing that he was a "bootlegger." No amount of arguing could coax him to deny his statement. It was not until the hour of closing, that the mistake was discovered. The youth had been trying in his best English to explain to his classmates that he was a "brick layer."

Also Flowers

"Yes," said the teacher, "we have several plants and flowers named with the prefix 'dog.' Of course, the 'dog-rose' and the 'dog-violet' are well known to you all. But can any of you tell me others?"

For some moments the class remained silent. Then a bright idea illuminated the face of an urchin, and up went his hand.

"Collie flowers, Miss!"

AUTHORITY

To a little primary grade,
The school board made a call;
And they heard a little maid
Speak thus—to friends and all:

"Among the gold there's silver thread,
And hair is worthless off the head—
My father says so;
One match can turn a forest red
Or burn a city up, instead,—
That's why we're always filled with dread—
My father says so!

The 'Barefoot Boy' is wrong and bad,
The 'Village Smithy' makes you sad—
My father says so;
George Washington was just a fad:
He's quite outlived what fame he had,
A greater man is my own dad—
My father says so!

A child likes fire until he's burned,
And thus most knowledge will be learned—
My father says so;
Success and chance must not be spurned:
They bring great help to all concerned,
And even worms have often turned—
My father says so!

A penny saved's worth two you spend,
And borrowers should never lend—
My father says so;
Experience will only tend
To truly prove that in the end
A faithful dog is your best friend—
Or so my father says!"

—Paul J. McCann.

No Wonder!

"Why did you break your engagement with that school teacher?"

"I didn't show up one night, and she wanted me to bring a written excuse signed by my mother."

Oh!

"So you have been visiting our schools, eh? Splendid, aren't they? Magnificent discipline, superb buildings, beautiful furnishings. By the way, I want to ask you what was the first thing that struck you on entering the playgrounds?"

"A snowball," said the visitor dryly."

Not Included

"How does it happen," a teacher inquired of a new pupil, "that your name is Gilman and your mother's name is Kelsey?"

"Well," explained the boy, "mom got married again and I didn't."

Absent by Mail

"How do you play hookey from the correspondence school?"

"I send them an empty envelope."—Boston Transcript.

"The Old Gray Mare"

She was trying to be nice to the little girl, whose mother was a great friend of hers.

"I hope you are getting on well at school," she said. "Now, I wonder if you can spell 'horse'."

"I could if I wanted to," replied the little girl. "But don't you think it's rather old-fashioned?"

Headmaster: "Ive had a warm time caning all those boys in the list you sent me."

Form Master: "Great Scott, sir! That was the list of those boys I suggested for promotion."

When the plans are drawn

YOUR architect will be interested in the suggestions of the L. B. Library Department Man. Your librarian will profit from his aid. But most of all your governing board will appreciate his wide and specialized experience. As building plans are drawn . . . questions of supervisory convenience arise . . . questions of wise utilization of space . . . questions of economical expenditure of funds . . . questions which he can answer—because somewhere, sometime he has answered them before.

Behind him are fifty years of intimate association with the American library. At his disposal are huge factories which for decades have built quality into technical library furniture. When your new library or school is in the blueprint stage, you requisition advisory service for which there is no counterpart as you talk with the L. B. Man. He is near you now. Write or phone him at the most convenient Library Department headquarters point. Without obligation of yours at all.

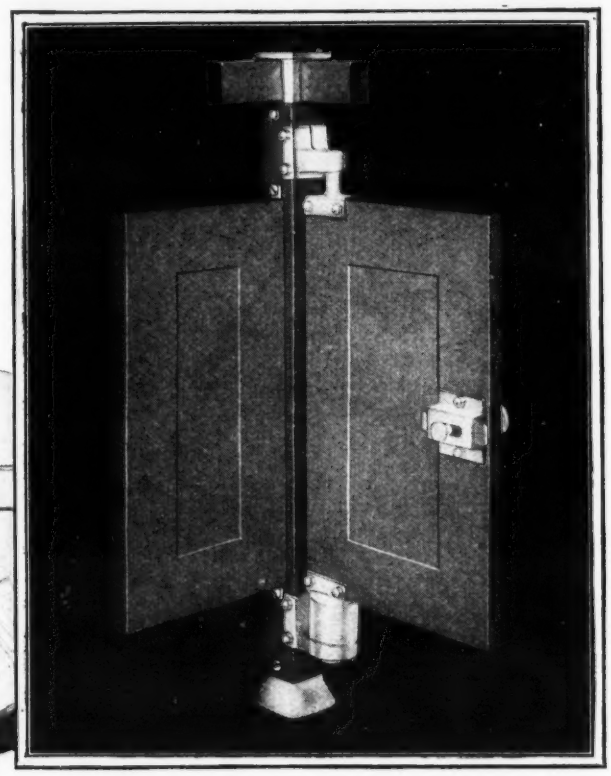
Library Department, 205 East 42nd St., New York City.

Remington Rand

BUSINESS SERVICE INC.

Headquarters Points of Library

205 East 42nd St.	118 Federal St.	214 W. Monroe St.	1200 S. Grand Ave.	89 Second St.
NEW YORK CITY	BOSTON, MASS.	CHICAGO, ILL.	LOS ANGELES, CAL.	SAN FRANCISCO, CAL.



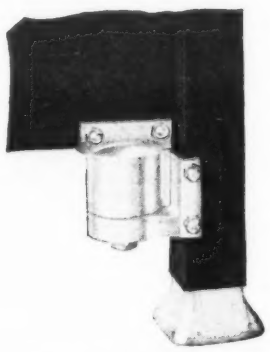
Photograph of Marblmetal sample ready to be shown to those interested in this latest building development.

To the Builder Who Wants to See Marblmetal

EVERYTHING about Marblmetal is fine. It is rich in quality. Combines all the advantages of marble and metal and is designed and engineered to be entirely in a class by itself.

Three-quarter inch, insulated panels and doors. Never before such strength built into a toilet partition. Will not absorb odors. Beautiful, durable, easy to keep clean. Chromium plated hardware.

Marblmetal is an outstanding achievement and to the builder who wants to see Marblmetal, we offer to show a sample small enough to stand on your desk and big enough to show every detail of its beauty, design and construction. Please address inquiry to our home office.



The new Marblmetal hinge has been subjected to a test equal to more than ten years' service without perceptible wear. That's quality! Note the well known Mills internal shoe, a definite sanitary feature. All chromium plated. And that's more quality!

THE MILLS COMPANY
A Mills Metal Partition for Every Purpose
905 Wayside Road . . . Cleveland, Ohio
REPRESENTATIVES IN ALL PRINCIPAL CITIES

MARBLMETAL

ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL

$1,095.90 saved by one office building in one year with Onliwon paper towel

ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL ONLIWON PAPER TOWEL

THE superintendent of one of the largest office buildings in the country calculates his yearly saving with Onliwon Towel Service over cloth towels as $1,095.90.

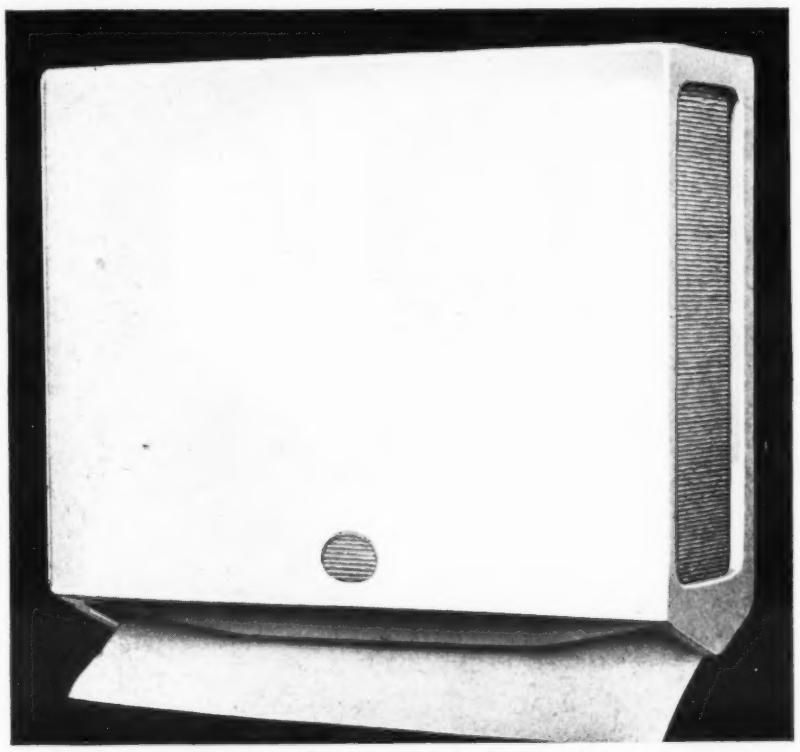
Over ordinary paper towels the economy is equally striking. A Nebraska manufacturer writes: "The other paper towels cost less in case lots, but we used 50% more of them. In dollars, our saving was 25% with Onliwon. And our men liked them much better because they dried better." "Efficient cabinets prevent waste. . ." "Use fewer because drying power much greater. . ." "Cost per pupil only ten cents per year. . ." "These statements are characteristic of buyers of towels in every sort of plant, building and institution.

Why Onliwon Service cuts expense

A. P. W. Onliwon Towels are a remarkable development for economy. Here, at last, is a paper fabric made scientifically to combine both absorbency and strength—during actual use.

We ask you to test this remarkable balanced formula in your own washroom. The long, soft Onliwon fibres are specially laid to hold together when damp. One Onliwon Towel wipes the hands dry.

And Onliwon Towels are dispensed twice folded. In the hands of the user, drying efficiency is more than doubled; and the hands will not break through these two tough layers.



Onliwon towel cabinet, solid white porcelain. Can also be supplied with nickel silver door.

More drying power per case

A case of Onliwon Towels contains up to 21% more drying surface than other brands. Dispensed from standard Onliwon cabinets, they keep your towel costs to the absolute minimum.

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